Nos. 79-1429 and 79-1583

JAN 30 1981

MICHAEL RODAK, JR. CLERK

IN THE

Supreme Court of the United States

OCTOBER TERM, 1980

AMERICAN TEXTILE MANUFACTURERS INSTITUTE, INC., ET AL.,

Petitioners,

v.

RAY MARSHALL, SECRETARY OF LABOR, ET AL.,

Respondents.

NATIONAL COTTON COUNCIL OF AMERICA,

Petitioner,

v.

RAY MARSHALL, SECRETARY OF LABOR, ET AL.,

Respondents.

On Writs of Certiorari to the United States Court of Appeals for the District of Columbia Circuit

---

BRIEF FOR UNION RESPONDENTS

J. ALBERT WOLL
General Counsel, AFL-CIO
815 15th Street, N.W.
Washington, D.C. 20005

ELLIOT BREDHOFF
General Counsel
Industrial Union Department, AFL-CIO
1000 Connecticut Avenue, N.W.
Washington, D.C. 20036

ARTHUR M. GOLDBERG
General Counsel
Amalgamated Clothing & Textile Workers Union
15 Union Square
New York, New York 10003

Of Counsel

GEORGE H. COHEN
(Counsel of Record)
ROBERT M. WEINBERG
JEREMIAH A. COLLINS
BREDHOFF, GOTTESMAN, COHEN, CHANIN, WEINBERG & PETRAMALO
1000 Connecticut Avenue, N.W.
Washington, D.C. 20036
(202) 833-9340

LAURENCE GOLD
815 16th Street, N.W.
Washington, D.C. 20006

Attorneys for American Federation of Labor and Congress of Industrial Organizations, Industrial Union Department, AFL-CIO, and Amalgamated Clothing & Textile Workers Union, AFL-CIO

WILSON - EPES PRINTING CO., INC. - 789-0096 - WASHINGTON, D.C. 20001

IN THE

Supreme Court of the United States

OCTOBER TERM, 1980

Nos. 79-1429 and 79-1583

AMERICAN TEXTILE MANUFACTURERS INSTITUTE, INC., ET AL.,

Petitioners,

v.

RAY MARSHALL, SECRETARY OF LABOR, ET AL.,

Respondents.

NATIONAL COTTON COUNCIL OF AMERICA,

Petitioner,

v.

RAY MARSHALL, SECRETARY OF LABOR, ET AL.,

Respondents.

On Writs of Certiorari to the United States Court of Appeals for the District of Columbia Circuit

---

BRIEF FOR UNION RESPONDENTS

COUNTERSTATEMENT OF THE QUESTIONS PRESENTED

1. Whether a health standard satisfies the requirements of the Occupational Safety and Health Act when the Secretary has properly determined (a) that the standard substantially reduces a significant risk to worker health, (b) that the standard is the one that "most ade-

quately assures" worker protection, and (c) that the standard is "feasible."

2. Whether the Occupational Safety and Health Act authorizes the Secretary to require earnings protection for workers whose only available safeguard against exposure to excessive levels of a harmful physical agent is transfer to jobs in low exposure areas.

TABLE OF CONTENTS

	Page
COUNTERSTATEMENT OF THE QUESTIONS PRESENTED	i
TABLE OF AUTHORITIES	v
STATUTORY PROVISIONS INVOLVED	1
STATEMENT OF THE CASE	1
I. Health Effects	2
A. The Chronic Disease	2
B. The Acute Disease	4
C. The Dose-Response Relationship	6
II. The Standard	10
III. The Technological Feasibility of the Standard	14
IV. The Costs of the Standard	14
SUMMARY OF ARGUMENT	19
ARGUMENT	23
I. THE SECRETARY IN SETTING THE COTTON DUST EXPOSURE LIMITS CARRIED OUT THE MANDATE OF §§ 3(8) AND 6(b)(5) OF OSHA	23
A. The Governing Statutory Principles	23
B. The Statutory Principles Applied	40
II. THE ACT AUTHORIZES THE SECRETARY TO REQUIRE EARNINGS PROTECTION FOR WORKERS WHO MUST BE TRANSFERRED TO AVOID EXCESS EXPOSURE TO COTTON DUST	51
CONCLUSION	55

TABLE OF CONTENTS—Continued

		Page
APPENDIX A:	Text of Statutory Provisions Involved	1a
APPENDIX B:	A Survey of Statutory Approaches to the Consideration of Costs and Benefits in the Promulgation of Health and Safety Regulations	1b

TABLE OF AUTHORITIES

Cases: Page

Environmental Defense Fund v. *EPA*, 548 F.2d 998 (D.C. Cir. 1976) 5b

EPA v. *National Crushed Stone Assn.* (No. 79-770; Dec. 2, 1980) 22, 24, 51, 2b

Forester v. *CPSC*, 559 F.2d 774 (D.C. Cir. 1977) .. 4b

Industrial Union Depart. v. *American Petrol. Inst.*, —— U.S. —— (Nos. 78-911 & 78-1036; July 2, 1980) 19, 20, 23, 27

Industrial Union Department v. *Hodgson*, 499 F.2d 467 (D.C. Cir. 1974) 53

TVA v. *Hill*, 437 U.S. 153 (1978) 39

United States v. *General Motors Corp.*, 518 F.2d 420 (D.C. Cir. 1975) 3b

United States v. *Rutherford*, 442 U.S. 544 (1979) .. 5b

Weyerhaeuser Corp. v. *Costle*, 590 F.2d 1011 (D.C. Cir. 1978) 2b

Whirlpool Corp. v. *Marshall*, 445 U.S. 1 (1980) .. 49, 53, 54

Statutes and Regulations:

Child Protection and Toy Safety Act of 1969, as amended, 15 U.S.C. § 1261 *et seq.* 4b

§ 1261(s) 4b

Clean Air Act Amendments of 1970, as amended, 42 U.S.C. § 7401 *et seq.* 3b

§ 7545(c)(2)(A) 3b

§ 7545(c)(2)(B) 3b

Clean Water Act Amendments of 1977, 33 U.S.C. § 1251 *et seq.* 2b, 3b

§ 1314(b)(4)(B) 3b

Consumer Product Safety Act of 1972, 15 U.S.C. § 2051 *et seq.* 4b

§ 2056(a) 4b

§ 2058(c)(1)(A) 4b

§ 2058(c)(1)(C) 4b

§ 2058(c)(2)(A) 4b

TABLE OF AUTHORITIES—Continued

	Page
Energy Policy and Conservation Act of 1975, as amended, 42 U.S.C. § 6201 *et seq.*	1b
§ 6295(c)	1b
§ 6295(d)	1b
Federal Coal Mine Health and Safety Act of 1969, 30 U.S.C. § 801 *et seq.*	53
§ 801-878	53
§ 801-960	53
§ 842(b)	53
§ 842(e)	53
§ 843(b)	53
§ 863	53
Federal Environmental Pesticide Control Act of 1972, as amended, 7 U.S.C. § 136 *et seq.*	4b
§ 136(bb)	4b
§ 136a(c)(5)(C)	5b
§ 136a(c)(5)(D)	5b
§ 136a(c)(7)	5b
§ 136a(c)(8)	5b
§ 136a(d)	5b
§ 136d(b)	5b
Federal Food, Drug, and Cosmetic Act of 1938, 21 U.S.C. § 301 *et seq.*	5b
§ 321(p)(1)	5b
§ 346	5b
§ 346a	5b
§ 348(c)(4)(A)	5b
§ 348(c)(4)(B)	5b
§ 360b	5b
Federal Water Pollution Control Act Amendments of 1972, as amended, 33 U.S.C. § 1251 *et seq.*	1b
§ 1311(b)(1)	2b
§ 1311(b)(2)(A)	2b
§ 1312(b)(1)	2b
§ 1312(b)(2)	3b
§ 1314(b)(1)(B)	2b

TABLE OF AUTHORITIES—Continued

	Page
Flood Control Act of 1936, 33 U.S.C. § 701 *et seq.*...	1b
§ 701(a)	1b
National Traffic and Motor Vehicle Safety Act of 1966, as amended, 15 U.S.C. § 1381, *et seq.*.....	3b
§ 1391(1)	3b
Occupational Safety and Health Act of 1970, 29 U.S.C. § 651 *et seq.*	*passim*
§2(b), 29 U.S.C. § 651(b)	25
§ 3(8), 29 U.S.C. § 652(8)	*passim*
§ 6(a), 29 U.S.C. § 655(a)	8, 25
§ 6(b)(5), 29 U.S.C. § 655(b)(5)	*passim*
§ 6(b)(6)(A), 29 U.S.C. § 655(b)(6)(A).....	35
§ 6(b)(7), 29 U.S.C. § 655(b)(7)	23, 52, 54
§ 6(b)(8), 29 U.S.C. § 655(b)(8)	25
§ 28, amending 15 U.S.C. § 636(b)(5)	21, 38
The Outer Continental Shelf Lands Act Amendments of 1978, 43 U.S.C. § 1331 *et seq.*	1b
§ 1347(b)	1b
Small Business Act, 15 U.S.C. § 633, *et seq.*	22
§ 636(b)(5)	22
Toxic Substances Control Act of 1976, 15 U.S.C. § 2601 *et seq.*	5b
§ 2605(a)	5b
§ 2605(c)(1)	5b
Walsh-Healy Act, 41 U.S.C. § 35 *et seq.*	8
§ 35(e)	8
Code of Federal Regulations	
29 C.F.R. § 1910.1043(d)	13
29 C.F.R. § 1910.1043(f)(1)	51
29 C.F.R. § 1910.1043(f)(1)(i)	12
29 C.F.R. § 1910.1043(f)(1)(ii)	13
29 C.F.R. § 1910.1043(f)(1)(iii)	13
29 C.F.R. § 1910.1043(f)(1)(iv)	13

TABLE OF AUTHORITIES—Continued

Page

29 C.F.R. § 1910.1043(f)(1)(v) 13
29 C.F.R. § 1910.1043(f)(2)(v) 13, 51
29 C.F.R. § 1910.1043(h) 13
29 C.F.R. § 1910.1043(i) 13
29 C.F.R. § 1910.1043(j) 13
29 C.F.R. § 1910.1043(k) 13
29 C.F.R. § 1910.4 2

Legislative Materials:

Senate Subcomm. on Labor, Comm. on Labor and Public Welfare, 92d Cong., 1st Sess., Legislative History of the Occupational Safety and Health Act of 1970 (Comm. Print 1971) ..... *passim*
Senate Report No. 89-1301, 89th Cong., 2d Sess. (1966) 4b
Senate Report No. 91-237, 91st Cong., 1st Sess. (1969) 4b
Senate Report No. 91-1282, 91st Cong., 2d Sess. (1970) 30, 31, 38, 40, 41
Senate Report No. 92-749, 92d Cong., 2d Sess. (1972) 4b
House Report No. 91-1765, 91st Cong., 2d Sess. (1970) 35
House Report No. 91-2191, 91st Cong., 2d Sess. (1970) 29
House Report No. 92-1153, 92d Cong., 2d Sess. (1972) 4b

Miscellaneous:

House Comm. on Interstate and Foreign Commerce, Subcomm. on Oversight and Investigations, *Federal Regulation and Regulatory Reform*, 95th Cong., 1st Sess. 515 (1976) 40
Decision of the Commissioner in the Matter of Diethylstilbestrol: Withdrawal of Approval of New Animal Drug Applications, 44 Fed. Reg. 54852 (Sept. 21, 1979) 5b

STATUTORY PROVISIONS INVOLVED

In addition to the sections of the Occupational Safety and Health Act of 1970, P.L. 91-596, 84 Stat. 1590, 29 U.S.C. § 651 *et seq.*, which are set forth in the Appendix to the Brief for Petitioners American Textile Manufacturers Institute, Inc., et al., other pertinent provisions of that Act are set forth in Appendix A to this brief.

STATEMENT OF THE CASE

More than 200,000 workers in the American textile industry inhale cotton dust throughout their regular working day.[1] As a result, thousands of these employees

---

[1] The textile industry has two basic sectors: (a) the manufacture of yarn and (b) the weaving of yarn into cloth. Approximately 200,000 workers are exposed to cotton dust in yarn manufacturing. 43 Fed. Reg. 27379, col. 2. A substantial additional number is exposed in the weaving sector. See Ex. 6, No. 76 at III-5 (Joint Appendix filed in this Court (hereinafter "App.") at 78).

The Secretary of Labor described the process of yarn manufacturing as follows:

> Cotton lint arrives at the textile mill in hydraulically compressed packaged bales. At the mill the bale covering is removed and the contents are passed through the *opening* machinery which exposes it to successive processes of intense decompression, beating, cleaning, and mixing. During these operations, dirt and other heavy impurities are removed by gravity or by centrifugal force through grids or screens. Cotton from the opening equipment is usually conveyed pneumatically to the *picker* room where it is fed evenly to the pickers which further open and clean the cotton and deliver either a picker lap, a flat thick batt of randomly oriented fibers, or pneumatically conveyed loose cotton lint to the carding machinery. *Carding* machines comb the fiber so that it lies straight and parallel and some cleaning is also effected. . . . The main processes in a spinning mill after carding are: *drawing* to obtain thorough fiber mixing and weight uniformity, *roving* to draw the sliver down to one-fourth to one-eighth its original size and slightly twist it, and *spinning* to give considerable fine draft to the soft roving and twist it into yarn. [Yarn manufacturing p]rocesses subsequent to spinning [i.e., *winding*, *spooling*, *twisting* and *warping*], are only amalgamation of yarn

suffer from chronic and acute respiratory diseases. The occupational health standard under review here is designed to reduce the incidence of these diseases by controlling employee exposure to cotton dust.

I. Health Effects

A. *The Chronic Disease*

Textile workers are permanently disabled by chronic obstructive pulmonary disease at more than three times the rate of comparable populations not exposed to cotton dust. In the statement of reasons accompanying the standard, the Secretary of Labor [2] concluded that by "conservative" estimate, approximately 35,000 present or former textile workers are currently permanently disabled by that disease (commonly known as "brown lung"). 43 Fed. Reg. 27353, col. 3; see also A. Bouhuys, et al., *Epidemiology of Chronic Lung Disease in a Cotton Mill Community*, Ex. 124 at 14 (App. 347).

Chronic obstructive pulmonary disease—which includes Grade 3 byssinosis, chronic bronchitis and emphysema—constitutes "the final clinical stage of cotton dust induced respiratory disease" and is irreversible. 43 Fed. Reg. 27353, col. 1. That disease is characterized by a

---

units or changes in the form of the package and result in the production of a yarn in a form suitable for dispatch to the fabric manufacturing mill.

43 Fed. Reg. 27365, cols. 1-2 (emphasis added). See also *id.* at 27365-67.

Weaving operations consist of slashing and weaving. In "slashing" sizing is added to the yarn to strengthen it for weaving. Weaving is the process of interlacing two sets of yarn, one running lengthwise on a loom, the other crosswise, by means of a shuttle, to produce a woven fabric which is ready for finishing processes such as dyeing.

[2] The authority of the Secretary of Labor to promulgate occupational safety and health standards under the Act has been delegated to the Assistant Secretary for Occupational Safety and Health. 29 C.F.R. § 1910.4. Hereinafter the term "Secretary" shall refer jointly to the Secretary and the Assistant Secretary.

debilitating permanent narrowing of the bronchial tubes or airways of the lungs. 41 Fed. Reg. 56500, col. 3:[3]

> In human terms, the affected worker frequently loses the ability to function normally on or off the job. . . . [T]he respiratory disease contracted in the textile mills typically result[s] in premature retirement often after futile and painful attempts to continue on the job. [43 Fed. Reg. 27352-27353.]

The record contains extensive worker testimony documenting that point. The following examples are illustrative:

> My mother had to leave the mill in [her] early fifties. Before she left, her breathing got so short she just couldn't hold out to work. My step-father left the mill on account of breathing problems. He had coughing spells til he couldn't breath[e], like a child's whooping cough. Both my sisters who work in the mill have breathing problems. My husband had to give up his job when he was only fifty-four years old because of the breathing problem.
>
> I had to retire at age fifty with a breathing problem that has since been diagnosed as byssinosis caused by breathing cotton dust. [Tr. 2094-2095 (App. 451-452) (testimony of Mrs. Norton).]

> Every time that I [would] go into the mill I [would] get deathly sick, choking and vomiting[,] losing my breath. . . .
>
> I am only fifty-seven years old and I am retired and I can't even go to church because of my breathing. I get short of breath just walking around the house or dressing or sometimes just watching T.V.

---

[3] The reference is to the preamble to the proposed standard. In the statement of reasons accompanying the final standard the Secretary incorporated by reference "the basic conclusions advanced in the proposed regulations" regarding the health effects of cotton dust. 43 Fed. Reg. 27352, col. 2.

> I cough all the time. [Tr. 2096 (App. 452) (testimony of Mrs. McCoy).][4]

"Total disability and even death may follow." 41 Fed. Reg. 56500, col. 3; see also *id.* at 56501, cols. 1-2.

B. *The Acute Disease*

The process that produces chronic obstructive pulmonary disease in workers exposed to cotton dust generally commences with acute respiratory ailments and loss of lung function. 43 Fed. Reg. 27352, cols. 2-3, 27354, col. 2. The acute stages of that disease process have been classified as byssinosis grades ½, 1, and 2.[5] There is no orderly progression from one grade of the disease to the next. As Dr. Russell Harley, an American Textile Manufacturers Institute (ATMI) witness, testified:

> [T]he assumption is often made that the disorder progresses from ½ to 1 to 2 to 3 and, thus, all grades reflect the progress of the individual's disability. In many instances, however, there is no progression at all. Sometimes Grade 3 seems to ap-

---

[4] See also Tr. 2107 (App. 453) (testimony of Louis Harrell):

> I got a slip from my doctor in Duke saying I had to get out of the dust if I were to survive. I gave it to [the company] and that seemed not to make any difference. They just didn't come across with anything so I had to quit because I couldn't lay down and rest without oxygen in the night. . . . [When] I walked across to the mill [,] I couldn't even breathe, I had to get out of the door so I could breathe and [my doctor] told me not to go back in there under any circumstances. So that is how I came to leave.

See also, *e.g.*, Tr. 2152-2154 (App. 456-457); Tr. 2187-2188 (App. 457-458).

[5] The commonly used Schilling system classifies the acute stages of byssinosis as follows (41 Fed. Reg. 56500, col. 3):

> Grade ½—occasional chest tightness on the first day of the work week.
>
> Grade 1 —chest tightness and/or breathlessness regularly occurring on the first day of the work week.
>
> Grade 2 —chest tightness and/or breathlessness throughout the week.

> pear *de novo* or there is a jump from 1 to 3. Among those who develop permanent disability, Grade 2 very often never occurs. [Ex. 41 at 3 (App. 192).]

As the Secretary found, "the rate at which a worker progresses to [the chronic] stage, if at all, depends upon . . . the susceptibility of the individual." 43 Fed. Reg. 27352, col. 3.[6]

Looking at the adverse health effects in each of the acute stages of the disease, the Secretary found that these effects are "significant . . . in themselves and should be prevented in so far as possible." *Id.* at 27354, col. 2. These effects include shortness of breath, chest tightening, coughing and wheezing, and fatigue.[7] They are typically first experienced by a worker upon re-entering the mill at the beginning of a work week; thereafter, with continuing exposure, the effects become progressively more frequent and more severe. *Id.* at 27352, col. 2, 27354, cols. 2-3. Beginning at Grade ½, the physical distress suffered by workers with byssinosis reflects a significant loss of lung function, which loss is measurable by objective techniques.[8] At the higher grades

---

[6] The Secretary found that at the acute stages of byssinosis, the symptoms of the disease "apparently" may be reversed over time by eliminating further exposure of the affected employee to cotton dust. 43 Fed. Reg. 27354, col. 2. But a reversal of symptoms does not necessarily mean that all damage has been repaired; upon a return to exposure it is likely that an employee's "ability to combat the disease is less than when [he was] normal to begin with." Tr. 839-841 (App. 421-425) (Dr. El Batawi).

[7] In addition, beginning at Grade ½, acute byssinosis is accompanied by an increased prevalence of bronchitis. 43 Fed. Reg. 27354, col. 2.

[8] 43 Fed. Reg. 27352, cols. 2-3, 27354, col. 2. The most widely used measurement of pulmonary function is "forced expiratory volume in one second" (FEV_1), i.e., the volume of air which an individual is able to expel from his lungs in one second by blowing hard into a measuring device called a spirometer. See A. Bouhuys, *Byssinosis in the United States*, Ex. 6-16 at 14-15 (App. 17-18). As a group, workers with byssinosis, including those in grade ½,

of acute byssinosis, the physical distress[9] and the measurable loss of lung function increase; by Grade 2, breathlessness and fatigue are frequently such that a worker must seek a change of job. See J. Merchant, et al., *Dose Response Studies in Cotton Textile Workers*, Ex. 6-51 at 8 (App. 48); see also pp. 9-10, *infra*.

C. *The Dose-Response Relationship*

The Secretary concluded that:

> [T]he work by [Dr. James] Merchant et al . . . represents the most thorough and objective evaluation of byssinosis prevalence in the United States textile industry. . . . [43 Fed. Reg. 27355, col. 3.][10]

---

exhibit lower FEV_1 values (i.e., less ability to breathe out forcefully) than other workers. 43 Fed. Reg. 27354, col. 2.

[9] As Dr. Arend Bouhuys, Director of the Yale University Lung Research Center and "a preeminent authority on pulmonary function" (43 Fed. Reg. 27353, col. 2), explained:

> I think it is important to stress that I and others who have done similar studies have seen these workers at the end of the work shift, have noticed their labored breathing . . . so, there is no doubt in my mind that there is a serious health hazard here judging from these acute effects" [Tr. 168 (App. 401-402).]

Those observations were confirmed by Dr. Jeffrey Taylor, Associate Director of the Appalachian Laboratory for Occupational Safety and Health (operated by the National Institute for Occupational Safety and Health (NIOSH), the research agency created by the Act within the Department of Health and Human Services, 29 U.S.C. § 671). Dr. Taylor stated that the symptoms of acute byssinosis tend "to become worse during the working day. And in the evening [the affected worker] finds it difficult to undergo normal activities, he finds it difficult to walk rapidly home, and tends to do very little." Tr. 1025 (App. 434-435).

[10] Dr. Merchant is presently the Director of the Appalachian Laboratory for Occupational Safety and Health (see note 9, *supra*), and has been engaged in research regarding the respiratory diseases of textile workers since 1968. Tr. 1000-1001 (App. 423-424). His studies of the prevalence of respiratory ailments in the textile industry comprise some 15 papers, which have been part of the scientific literature since the early 1970's. 43 Fed. Reg. 27355, col. 3.

And, the Secretary found, "the dose-response data of Merchant [et al.], supported by numerous other studies [in the record] . . . , is the best available. . . ." *Id.* at 27358, col. 2.[11]

The Merchant study found a "striking dose-response relationship[]," *ibid.*, "between the prevalence of byssinosis and the concentration of lint-free respirable dust as measured by a vertical elutriator."[12] *Id.* at 27353, col. 3. The Secretary concluded that this dose-response relationship provides a proper basis to assess the extent of the health risks presented by different levels of exposure to cotton dust. *Id.* at 27358, col. 2 - 27360, col. 3.

The most extensive of these papers is nearly 350 pages long. See J. Merchant, *Epidemiological Studies of Respiratory Disease Among Cotton Textile Workers*, Ex. 38d.

[11] The Secretary noted that Merchant's study had been "published and subject to peer review for several years without any major reported challenges to its basic soundness." 43 Fed. Reg. 27357, col. 3. At the hearing the only witness to question the validity of Merchant's methodology was Dr. Moon Suh, a Burlington Industries statistician. After reviewing Suh's criticisms, the Secretary found the rebuttal offered by Dr. Merchant and others "convincing[ ]." *Ibid.* "Contrary to Dr. Suh's view, an evaluation of the methodology of this massive survey of thousands of textile workers shows the Merchant study to have been based on sound statistical ground." *Ibid.*; see generally *id.* at 27357-27358.

At the hearing, ATMI submitted several surveys conducted under the auspices of ATMI and certain of its member companies. These ATMI surveys purported to find lower prevalences of byssinosis than the Merchant study found. None of these surveys approached the Merchant study in rigor, thoroughness, and extent of documentation. The Secretary addressed these industry surveys in detail, 43 Fed. Reg. 27355-27357, and concluded that they cast no doubt on the findings of the Merchant study.

[12] The vertical elutriator is a device which measures the airborne concentration of lint-free respirable cotton dust—i.e., dust particles of 15 microns or less in size. *Id.* at 27355, col. 2. Measurements of the concentration of "elutriated dust" (which are expressed in terms of weight-per-volume) correspond most closely with the observed health effects of exposure to cotton dust. *Ibid.* Unless otherwise specified, hereinafter all references to exposure levels shall be to concentrations of elutriated dust.

The Merchant study found that 26% of workers in *yarn manufacturing* operations [13] in the cotton textile industry would contract some form of acute byssinosis if exposed at a concentration of 500 ug/m^3 of elutriated cotton dust—an exposure level equivalent to that permitted by the then-current federal government standard [14] and the level that petitioner ATMI proposes should be continued as the standard. 43 Fed. Reg. 27355, col. 3.[15] The study further found that the prevalence of byssinosis among those workers is reduced to 13% when the exposure level is reduced to 200 ug/m^3—the level that

---

[13] Yarn manufacturing includes all operations in the cotton textile manufacturing process except the weaving operations. See note 1, *supra*.

[14] At the time of the rulemaking the exposure limit for all operations was 1000 ug/m^3 of "total dust." See 43 Fed. Reg. 27351, col. 1. In yarn manufacturing operations, this is roughly equivalent to 500 mg/m^3 of elutriated dust. 41 Fed. Reg. 56504, col. 3; see also note 12, *supra*. The 1000 ug/m^3 total dust standard was first adopted in 1968 by the Secretary pursuant to the Walsh-Healy Act, 41 U.S.C. § 35(e), to apply to government contractors. In 1971 that PEL was adopted by the Secretary, without notice and comment, as an OSHA standard pursuant to § 6(a) of the Act, 29 U.S.C. § 655(a), which required as an interim measure the prompt adoption, without rulemaking procedures, of "established Federal standard[s]." The 1000 ug/m^3 total dust standard was originally selected as a Walsh-Healy standard because it had been recommended as a "Threshold Limit Value" (TLV) by the American Conference of Governmental Industrial Hygienists (ACGIH). 43 Fed. Reg. 27351, col. 1. In 1974, however, the ACGIH revised its TLV for cotton dust, adopting a limit of 200 ug/m^3 of elutriated dust. *Ibid.*

[15] The Merchant study measured the prevalence of byssinosis observed at a particular time, in relation to the dust levels present at that time. ATMI asserts that the study is therefore flawed because "exposure levels in the past [in the plants studied] . . . [were] presumably higher." ATMI Br. at 9. But Merchant testified that to avoid just that problem he selected for his study mills at which production processes and machinery, as well as dust control equipment, had not been changed significantly in recent years, and at which the dust levels should have been the same as in the past. Tr. 1042 (App. 438).

the Secretary ultimately adopted as the maximum permissible level. And, the prevalence of such disease is reduced still further to 7% when the level is reduced to 100 ug/m^3—the level that respondent unions urged the Secretary to adopt. *Ibid.*

With respect to *weaving* operations,[16] the study found that the rate of byssinosis is 5% at the exposure level then permitted by the government, 1000 ug/m^3 "*total* dust".[17] *Ibid.* The rate of byssinosis among affected employees rises to 10% when the exposure level in the weaving operation is raised to 750 ug/m^3 "elutriated dust"—the level that the Secretary ultimately permitted. *Id.* at 27360, col. 3.[18]

The Merchant study also broke down the data on prevalence rates by grade of byssinosis. This breakdown shows that the prevalence of grade 2 byssinosis for yarn manufacturing operations is 8% at an exposure level of 500 ug/m^3, as compared to 3% at an exposure level of 200 ug/m^3. Ex. 6-51, Tables 2 and 6 (group 5) (App. 31, 44).

The authors of the study emphasized that this data underestimated the prevalence rates of grade 2 byssinosis and of chronic obstructive pulmonary disease:

> [Workers] with tightness on Monday and other days (Grade 2) frequently also complain of dyspnea and fatigue; as a result it is not uncommon to find that these workers request a change in job location.

---

[16] See note 1, *supra.*

[17] See note 14, *supra.*

[18] The dust in weaving rooms is composed primarily of sizing materials, usually starch or polyvinyl alcohol, rather than cotton. *Id.* at 27360, col. 2. This explains why dust in weaving operations results in a lower prevalence of byssinosis than the same concentration of dust in yarn manufacturing operations. *Ibid.* The Secretary determined that the previous 1000 ug/m^3 *total* dust standard was "more stringent" than the 750 ug/m^3 *elutriated* dust standard which the Secretary adopted in the instant standard for weaving operations. *Id.* at 27381, col. 1.

> Therefore, those with Grade 2 byssinosis symptoms are likely to represent a highly selected group which would very likely result in an underestimation of risk. *Id.* at 7-8 (App. 48).[19]

Further, studies of only *active* workers cannot measure the prevalence of chronic obstructive pulmonary disease, because, as the Secretary found, this "disease contracted in the textile mills typically result[s] in premature retirement often after futile and painful attempts to continue on the job." 43 Fed. Reg. 27352, col. 3 - 27353, col. 1; see also pp. 3-4, *supra*. However, the study of Dr. Bouhuys, which included *former* as well as active cotton textile workers, enabled the Secretary to assess the prevalence of chronic obstructive pulmonary disease among cotton textile workers:

> Although some estimates of the prevalence of chronic disease have been presented in various studies, the Bouhuys estimate constitutes the only evaluation of chronic health effects for the entire active and retired textile worker population. [*Id.* at 27353, col. 3-27354, col. 1.]

Bouhuys estimated, as mentioned, that these workers suffer disablement from chronic respiratory diseases at three times the rate of comparable populations not exposed to cotton dust and that "approximately 35,000 employed and retired textile workers are currently disabled" by such diseases. *Id.* at 27353, col. 3.[20]

II. The Standard

After reviewing the massive rulemaking record before him, the Secretary fashioned a standard designed to decrease the prevalence of respiratory disease among cot-

---

[19] See also Ex. 6-1 at 8 (App. 14) (Drs. Roach and Schilling); Ex. 124 at 11 (App. 344) (Dr. Bouhuys); Tr. 244-245 (App. 410) (Dr. Kilburn); Ex. 113 at 9 (App. 343) (Dr. Wolfe).

[20] As the Secretary stated, Dr. Bouhuys' estimate was based on a "conservative" definition of disability—i.e., a level of lung performance that "even for a very old person is a small fraction of the pulmonary performance of a 'normal lung'." *Ibid.*

ton textile workers by reducing the levels of employee exposure to cotton dust. The primary means the Secretary selected to achieve this objective was reduction of the permissible level of cotton dust in the air at the workplace.

The Secretary determined that for all operations other than weaving the permissible exposure level (PEL) would be 200 ug/m^3. This PEL, the Secretary recognized, will accomplish a significant reduction in the prevalence of acute and chronic respiratory diseases among cotton textile workers. The prevalence of acute byssinosis would be reduced from 26% to 13%, with the prevalence of Grade 2 byssinosis reduced from 8% to 3%. There are approximately 200,000 employees in the industry in the operations other than weaving, 43 Fed. Reg. 27379, col. 2. Thus, this PEL would reduce the number of employees suffering from acute byssinosis at any given time by at least 26,000; and the number of employees suffering from Grade 2 byssinosis at any given time would be reduced by at least 10,000.[21] A comparable reduction in the prevalence of chronic obstructive pulmonary disease would follow.

The Secretary was aware that with a PEL of 200 ug/m^3 there would still be a significant prevalence of cotton dust induced respiratory diseases among exposed workers—13% of these workers would still suffer acute byssinosis; 3% would still suffer Grade 2 byssinosis. 43 Fed. Reg. 27359, col. 2. The Secretary, however, determined "that achieving [a PEL of] 100 ug/m^3 [as urged by the unions] is not within the technological capabilities of the industry." *Id.* at 27360, col. 1.

---

[21] These figures are understated, for the reasons discussed at pp. 9-10, *supra*. In addition, they refer only to byssinosis and do not include other respiratory diseases induced by exposure to cotton dust. See pp. 5-6, *supra*.

With respect to weaving operations, the Secretary decided to raise the PEL from the then-current standard to 750 ug/m^3.[22] *Id.* at 27381, col. 1. The Secretary refused to adopt a lower PEL because "the evidence in the record supports the conclusion that engineering dust controls in weaving may not be feasible even with massive expenditures by the industry." *Id.* at 27360, col. 2.

The Secretary did not mandate any single method of achieving compliance with the PELs set in the final standard. Rather, the Secretary described several methods of dust control already in common use throughout the textile industry which could be applied singly or in combination, at the discretion of the regulated employer. *Id.* at 27362-67. The "application [of these methods of control] should bring the vast majority of cotton workplaces into compliance with the permissible exposure [limits] established in this standard." *Id.* at 27363, col. 2.

The Secretary determined, however, that the demand for control equipment that would result from establishment of the PELs would exceed the supply of such equipment for a substantial period of time. Accordingly, the Secretary in the standard gave all regulated employers four years in which to obtain and install the necessary control equipment. *Id.* at 27385, cols. 2-3. For this interim period, while employers are not required to use engineering controls to meet the PELs set by the standard, the Secretary imposed two stop-gap measures: (1) employers are required to provide appropriate respirators where exposure levels exceed the applicable PEL (29 C.F.R. § 1910.1043(f)(1)(i)); and (2) in the circumstance where an employee is exposed to cotton dust in excess of the PEL, and where a physician determines that he is physically unable to wear any respirator, the employer must offer such employee an opportunity to transfer, without loss of pay or other employment bene-

---

[22] See notes 14, 18, *supra*.

fits, to an available position having an exposure level at or below the PEL. 29 C.F.R. § 1910.1043(f)(2)(v).[23]

While accepting the use of respirators as an *interim* means of protection, the Secretary rejected the industry position that primary reliance be placed on respirators as a *long-term* solution to worker exposure to cotton dust. Based on the record before him, the Secretary found that "respirators have many disadvantages which preclude primary reliance or co-reliance on respiratory protection on an equal basis with engineering and work practice controls." 43 Fed. Reg. 27384, col. 3.[24]

---

[23] The standard also prescribes the use of respirators in certain limited circumstances after the expiration of the four-year period. 29 C.F.R. § 1910.1043(f)(1)(ii)-(v). In addition to the requirements with respect to exposure limits and respirators, the standard includes provisions regarding such matters as exposure monitoring (29 C.F.R. § 1910.1043(d)), medical surveillance (*id.*, § 1910.1043(h)), employee education and training (*id.*, § 1910.1043(i)), warning signs (*id.*, § 1910.1043(j)), and recordkeeping (*id.* § 1910.1043(k)). None of those discrete provisions is challenged in this Court.

[24] In making this finding, the Secretary relied upon the testimony of Bruce Held, project leader for respirator research at the Lawrence Livermore Laboratory of the University of California and former Chairman of the Atomic Energy Commission's Respiratory Advisory Committee. *Ibid.* Held testified:

> Respiratory protective devices have many limitations which make them undesirable if engineering controls are at all possible. Among the limitations of respirators are: A, fitting problems with persons with small faces, such as many women, with persons with facial hairs, such as beards or long sideburns, scars or growths which break the face piece to face seal, and with persons with pronounced wrinkling, a sunken nose bridge, deeply cleft chin, very narrow nose, a very wide or very narrow face, or very long or very short face; B, communication problems between workers wearing respirators. Any respirator will muffle voice communications to varying degrees. With many devices, the jaw movement used for speaking can break the face piece to face seal and cause inhalation of contaminated air; and C, vision problems can be numerous. Downward vision is obstructed with half or full face masks, thus increasing tripping or stumbling possibilities. The in-

III. The Technological Feasibility of the Standard

In this Court, the industry petitioners do not challenge the technological feasibility of the methods of compliance prescribed by the standard.[25]

IV. The Costs of the Standard

A. For those textile industry operations already in compliance with the PELs set by the standard, no dust control costs are imposed by the standard. At the time the standard was promulgated, in large portions of the industry exposure levels were already below the PELs set by the Secretary. An ATMI survey provided the most comprehensive set of data produced at the hearing respecting existing dust levels in the industry. Of the large sample of plants included in the survey, nearly 20% of the opening through roving operations,[26] and approximately 75% of the spinning operations, were already at or below the 200 ug/m^3 exposure level, while 88% of the weaving operations were already at or below the 750 ug/m^3 exposure level. Ex. 176.[27]

With respect to those operations *not* already in compliance, there is no dispute as to the cost estimate adopted by the Secretary for the operations of *opening through roving*. Industry attacks the Secretary's reliance on the cost estimates prepared by Hovan Hocutt and Arthur Thomas (Hocutt-Thomas) on the ground that for certain

---

ability to look straight down can cause a serious injury. Full face respirators will restrict the wearer to tunnel vision. Persons who must wear prescription glasses must be fitted with special glasses kits for full face masks.

* * * *

D, fatigue and reduced efficiency, and E, some people, for reasons of health, would not be permitted to wear a respirator. Tr. 483-485 (App. 412-413). See also pp. 51-55, *infra*.

[25] See ATMI Br. at 8, n.16.

[26] These operations are described at note 1, *supra*.

[27] This exhibit appears at pp. 3490-3560 of the joint appendix filed in the court of appeals.

operations those figures were meant to reflect the costs of achieving exposure levels higher than those ultimately set by the Secretary. (ATMI Br. 12, 16, 25.) That criticism is inapplicable to the Hocutt-Thomas estimate of $425 million to meet the standard's PEL in the opening through roving operations. For Hocutt-Thomas recognized that the controls they envisaged for those operations would enable employers to reduce exposure levels to 200 ug/m³.[28]

Nor does industry complain about the Secretary's estimate of the costs of satisfying the PEL applicable to *weaving* operations. The Secretary raised that PEL over what it previously had been, and in any event the cost estimate adopted by the Secretary for compliance in weaving operations is much higher than the estimate put forward by RTI, whose overall figures (including the estimate for weaving operations) industry now embraces.[29]

Thus, all that remains in controversy is the Secretary's estimate of the cost of compliance in the 25% of the *spinning* operations where exposure levels are in excess of 200 ug/m³. The Hocutt-Thomas study concluded that the cost of the control equipment necessary to reach 500 ug/m³ in spinning operations would be $17.7 million.[30]

---

[28] 43 Fed. Reg. 27380, Table 1, note 2. The Hocutt-Thomas estimate for the opening through roving operations is almost identical to the estimate in the record industry endorses—that stated in the report of the Research Triangle Institute (RTI). The Hocutt-Thomas estimate of the cost of control equipment to meet a 200 ug/m³ standard in these operations is $425.6 million. See Ex. 60 at 3-6 and Attachment #1 thereto (App. 236-239, 251); Ex. 62, Attachment II (App. 486). RTI's estimate is approximately $429.5 million (derived by applying a process-by-process ratio to the data in Ex. 6, No. 76 at I-15, V-17 (App. 74, 92).

[29] See 43 Fed. Reg. 27380, Table 1 (data for yarn processing).

[30] See Ex. 60 at 3-6 and Attachment #1 thereto (App. 236-239, 251); Ex. 62, Attachment II (App. 486). ATMI maintains that by comparing the RTI and the Hocutt-Thomas estimates for the costs of compliance in spinning operations, the effect of assuming a 500

The Secretary adopted that cost estimate, concluding for the following reasons that by using the dust control equipment Hocutt-Thomas prescribed, the 200 ug/m³ PEL could be met in spinning operations without significant additional costs:

> Hocutt maintained that it would not be feasible to reduce dust levels in all spinning operations to levels lower than 500 ug/m³. His position was based on the difficulty in working with some equipment, and the configuration or the lack of space needed to install ventilation equipment. OSHA is aware that confounding factors exist in some mills which make installation of ventilation equipment difficult. However, when more attention has been given to general principles of ventilation control, this has in many

---

ug/m³ PEL as opposed to a 200 ug/m³ PEL may be discerned. ATMI points to the fact that while the Hocutt-Thomas estimate for spinning operations based on a 500 ug/m³ PEL was $17.7 million, the RTI estimate for such operations based on a 200 ug/m³ PEL was $553.3 million. Thus, ATMI concludes, "the Hocutt-Thomas figures would have to be increased by at least $535 million if it were to be applied to achieving a [200 ug/m³] limit in spinning . . ." ATMI Br. at 26-27, n.53. That conclusion does not follow. RTI made its own separate cost estimate for spinning at the 500 ug/m³ PEL—approximately $113 million, or over 6 times the Hocutt-Thomas figure of $17.7 million. (The figure of $113 million is derived by applying a process-by-process ratio to the data in Ex. 6, No. 76 at I-15, V-17 (App. 74, 92)). This disparity is not a product of the PEL that was assumed. Rather, it is the product of erroneous factual assumptions underlying the RTI estimate.

In particular, RTI did not have data on the dust levels in the industry. RTI's cost calculations therefore assumed that all mills were operating at the exposure level permitted by the old standard (1000 ug/m³ total dust) and that no mill had installed any of the equipment RTI recognized as necessary to achieve a lower level. Ex. 16 at 29, 34-39 (App. 169-171); Tr. 617-619 (App. 418-420). Primarily because RTI ignored the actual conditions in the industry its study projected a $553 million cost for achieving a PEL of 200 ug/m³ in spinning. This estimate grossly overstated the cost because, contrary to RTI's assumption, the record shows that at the time of the rulemaking, exposure levels in the vast majority of spinning operations were below the old standard, and in 75% of such operations, exposure levels were already at or below 200 ug/m³

> instances sufficed to reduce levels to within those herein prescribed. Further, when the entire process is viewed rather than each operation independently, it becomes clear that reduction in dust levels in beginning operations may affect the levels in final operations.[31] Further, in some instances isolation of spinning from dustier operations could be utilized along with additional general ventilation improvements to bring levels to within those herein prescribed. In the past, application of the principles described above have been used successfully to reduce dust levels in the workplace, and it is reasonable to anticipate that this is what will be done now. [43 Fed. Reg. 27366, col. 3][32]

The Secretary determined that for all textile industry operations, the Hocutt-Thomas estimate of $550 million was a reasonable approximation of the cost of compliance with the standard. The Secretary noted, moreover, that Hocutt-Thomas had made certain assumptions which tended to overstate that cost. In particular, the Hocutt-Thomas estimate failed to reflect "the existing trend toward replacement of conventional [production] machines with newer equipment which is more productive

---

[31] In this regard the Secretary further stated:

> When each operation in the textile process is examined with regard to its relationship to subsequent operations, it is clear that reducing dust levels in operations from opening to roving would aid in the reduction of dust levels in areas of final processing such as spinning. 43 Fed. Reg. 27367, col. 1.

[32] For the operations connected with spinning (i.e., winding, spooling, twisting and warping), the Secretary likewise adopted the Hocutt-Thomas cost estimate. While Hocutt had maintained that the PEL for such operations should be set at 500 ug/m^3, the Secretary found that dust levels could easily be reduced to 200 ug/m^3 using the control methods Hocutt prescribed:

> Levels in all these operations are currently very low and are not expected to present a compliance problem . . . . OSHA . . . concludes that the vast majority of workplaces will be able to comply with little difficulty.

43 Fed. Reg. 27367, col. 2.

and produces less dust," and which results in "fewer machines to be retrofitted or controlled." 43 Fed. Reg. 27372, col. 3. The record—including a 1974 report that ATMI submitted to the United States Department of the Treasury—established that quite apart from the requirements of the cotton dust standard, the industry is in the process of a large-scale conversion to more modern production equipment which greatly eases the problem of dust control while bringing "higher production rates, labor savings and improved product quality." [33] But the Hocutt-Thomas estimate took no account of this important development; rather, that study calculated the cost of controlling cotton dust in the context of the particular machinery which was in place at the time of the study. Ex. 60 at 3-6 (App. 236-239).

B. RTI evaluated the ability of the industry to finance compliance with the standard at several different levels of cost. The highest cost level considered was more than

---

[33] *Id.* at 27363, cols. 1-2. See also *id.* at 27366, col. 3—27367, col. 1, 27370, col. 3—27371, col. 1, 27372, col. 3. The new equipment includes open-end spinning frames, which reduce dust levels in spinning while also eliminating the need for roving and winding operations; automatic opening equipment, which takes the place of manual opening and feeding; and chute-fed cards, which eliminate the picking operation and reduce dust levels in the carding process. Ex. 78 at 19 (App. 269). In the 1974 report referred to in the text ATMI represented that large segments of the industry were rapidly converting to this equipment, and would continue to do so. *Id.* at 20-23 (App. 269-273). Treasury agreed that this is the case. *Id.* at 24-26 (App. 273-276). The industry's ongoing conversion to this modern equipment was also documented by numerous technical reports, (*id.* at 28-30 (App. 278-280); Ex. 143, Appendices G, H (App. 367-371)), Union experience (Ex. 78 at 26-28, 33-35 (App. 277-278, 284-285)), expert testimony (Ex. 79A (App. 293-295)), and annual reports from textile companies to their stockholders (Ex. 78 at 30-33, and Appendices 15, 16 thereto (App. 281-283, 288-292)). As a 1977 article stated, the conversion to new equipment is a major reason why "the . . . description of the textile industry as a 'sick' industry does not hold water anymore." J. Yale, *The Economic Structure of the Textile Industry*, Ex. 143, Appendix F at 24 (App. 348, 350).

twice that which the Secretary found would be the actual cost of the standard he promulgated. 43 Fed. Reg. 27378, col. 2. At that high level, "nothing in the RTI study showed that the cotton [textile] industry as a whole [would] be seriously threatened. . . ." 43 Fed. Reg. 27378, col. 2. See Tr. 563. For the "much less severe" cost requirements of the standard actually promulgated, the Secretary concluded "that although some marginal employers may shut down rather than comply, the industry as a whole will not be threatened by the capital requirements of the regulation. . . ." 43 Fed. Reg. 27378, col. 2.[34]

SUMMARY OF ARGUMENT

I.

A. The Occupational Safety and Health Act (OSHA), and this Court's reading of that Act in *Industrial Union Depart.* v. *American Petrol. Inst.*, —— U.S. —— (Nos. 78-911 & 78-1036; July 2, 1980) (the *Benzene* case), establish the following proposition: *Congress* determined that the elimination or reduction of significant risks to employee health, through the most protective standards that are capable of achievement, justifies the substantial compliance costs that may be entailed.

---

[34] In reaching that conclusion, the Secretary took into consideration the ability of the industry to pass on the costs of the standard to consumers, and thus to maintain its existing profit levels. RTI stated that even at a level of costs twice that of the standard, the costs of compliance could ultimately be passed on to consumers. *Ibid.* This conclusion which the Secretary accepted was based on two factors. First, as Chase Manhattan Bank's textile industry specialist testified, even if the price of cotton products were to rise, synthetic fiber products are not likely to make a significant further penetration into the market for cotton textile products. Tr. 2559-62 (App. 474-476). As the Secretary noted, the recent increases in the price of petroleum, from which synthetic fibers are made, make it even less likely that cotton products will be unable to compete successfully with synthetics. 43 Fed. Reg. 27370, col. 2. Second, trade agreements give the domestic textile industry substantial protection against competition from imports. Ex. 6, No. 76 at VI-4 (App. 95).

The instant case is governed by §§ 3(8) & 6(b)(5) of OSHA. The *Benzene* case establishes that, at the least, these provisions "direct[]" the Secretary, where he makes the

> threshold finding that a place of employment is unsafe—in the sense that significant risks are present and can be eliminated or lessened by a change in practices . . . to select 'the standard' . . . that is most protective . . . [and that is] consistent with feasibility. [Opinion of Stevens, J., Sl. Op. 32, 33 n. 48; Opinion of Marshall, J., Sl. Op. 4-7, 30-33].

1. The language of §§ 3(8) & 6(b)(5) does not contain a hint that the Secretary, as a prerequisite to regulation, must, in addition to finding a significant risk to worker health, place a value upon the elimination or substantial diminution of that risk and then assess whether that value is in reasonable balance with the compliance costs of the regulation. The basic thrust of § 6(b)(5) is to the contrary: subject to the constraint of feasibility, the Secretary is directed to promulgate "*the*" standard that "*most* adequately assures" that "*no* employee will suffer material impairment. . . ."

2. The legislative history of OSHA shows that Congress meant exactly what the statutory language says. The first sentence of § 6(b)(5) was the product of a legislative search for a formula that would provide health standards "as effective as possible," while precluding the elimination of risks by eliminating the affected occupation or industry.

A more general review of the debate preceding OSHA's enactment confirms that Congress, understanding perfectly that the statute would require American industry to make large outlays of money, concluded that workers should not subsidize the production of goods with their health and that the cost of health and safety protection at the workplace should be counted as a cost of doing business reflected in the prices of goods in the market place. The legislative materials reveal no dissent from

that approach. No legislator espoused the theory that the protection of worker health should be compromised on the basis of a cost-benefit assessment.

Congress was fully aware of the consequences of its determination. Congress realized, for example, that the additional costs of doing business that would be required to comply with OSHA standards might threaten the viability of a great number of small employers. The legislative response was not, however, to dilute the mandate of § 6(b)(5) (or the other substantive provisions of the Act) or to exempt small employers from its reach. Rather, Congress established in § 28 of the Act a program to provide loans to small businesses to be used to achieve compliance with the standards promulgated by the Secretary.

B. It follows from the language of the statute, read in light of its legislative history and the *Benzene* opinion, that the test for determining whether a standard promulgated by the Secretary to regulate a toxic material meets the requirements of OSHA has three parts: first, whether the "place of employment is unsafe—in the sense that significant risks are present and can be eliminated or lessened by a change in practices." Opinion of Stevens, J., Sl. Op. 32. Second, whether, of the possible available correctives, the Secretary has selected "*the* standard . . . that is most protective." *Ibid.* Third, whether that standard is "feasible." The standard here meets that test.

1. The standard would reduce the number of workers suffering from acute byssinosis at any given time by at least 26,000; and the number of workers suffering from Grade 2 byssinosis at any given time would be reduced by at least 10,000. A comparable reduction in the prevalence of chronic obstructive pulmonary disease would follow.

2. ATMI does not contend that the Secretary failed to adopt the "most protective" standard. Rather, ATMI's

contention is that the "alternative" compliance scheme it proposed in the rulemaking provides cotton textile workers health protection "not significantly" less than that afforded by the Secretary's final standard and at a much lower cost. The ATMI alternative, however, falls far short of offering health protection equivalent to the Secretary's standard.

3. In this Court, the industry does not dispute the technological feasibility of the standard. As to economic feasibility, the Secretary's estimate that the total cost of compliance with the standard would be approximately $550 million is supported by the record. On the basis of the RTI analysis of the industry's ability to finance the cost of compliance with the standard, the Secretary concluded "that although some marginal employers may shut down rather than comply, the industry as a whole will not be threatened by the capital requirements of the regulation." And Congress did not intend the potential economic dislocation of marginal employers to bar the Secretary from regulating. In the provisions at issue here, as in the statute considered in *EPA* v. *National Crushed Stone Assn*, —— U.S. —— (No. 79-770; Dec. 2, 1980),

> Congress foresaw and accepted the economic hardship, including the closing of some plants, that [regulation] would cause; and Congress . . . took certain steps to alleviate this hardship, steps which did not include allowing a . . . [relaxation of the appropriate protective standards]. [Sl. Op. 14.]

II.

In this standard the Secretary provided an interim protection to workers who are exposed to concentrations of cotton dust in excess of the permissible level and who are found by a physician to be unable to wear a respirator: he required cotton mill operators to give such employees an opportunity to transfer to available lower exposure jobs without suffering a loss of earnings. The record showed that absent earnings protection the trans-

fer provision integral to the Secretary's interim scheme for worker protection would have been frustrated. ATMI contends that the Secretary was without statutory authority to promulgate this provision. But the Secretary's action falls well within the terms of § 6(b)(7) which authorizes him "[w]here appropriate [to] prescribe suitable . . . control procedures to be used in connection with [occupational health] hazards. . . ." And it comports with Congress' determination that compliance costs should be borne by employers as reasonable and necessary costs of doing business.

ARGUMENT

I. THE SECRETARY IN SETTING THE COTTON DUST EXPOSURE LIMITS CARRIED OUT THE MANDATE OF §§ 3(8) AND 6(b)(5) OF OSHA

A. The Governing Statutory Principles

The Occupational Safety and Health Act (OSHA), and this Court's reading of that Act in *Industrial Union Depart.* v. *American Petrol. Inst.*, —— U.S. —— (Nos. 78-911 & 78-1036; July 2, 1980) (the *Benzene* case), we believe, establish the following proposition: *Congress* determined that the elimination or reduction of significant risks to employee health, through the most protective standards that are capable of achievement, justifies the substantial compliance costs that may be entailed. Petitioners, in contrast, insist that OSHA does *not* reflect a Congressional decision on when the costs of a health standard are justified, but rather, leaves that question to the Secretary and to the judiciary to "assess[] costs and risk reduction benefits" and to decide, on a basis not disclosed, whether "there is a reasonable relationship between the two." ATMI Br. 39.

1. Regulation of industrial activity in order to promote the public interest in health and safety implicates a variety of complex practical and moral dilemmas. Recognizing the variousness of the problems, Congress has not adopted a single approach to such regulation. The

balance struck between health goals and technological and economic constraints in the legislative programs for purifying the air, cleaning the water, assuring wholesome supplies of food, providing drugs that serve their intended therapeutic purpose, regulating airplane and automobile safety and prohibiting dangerous consumer products, differs from statute to statute, often in basic concept, always in detail.[35] Thus, in proceedings challenging such regulation:

> The question . . . is not what a court thinks is generally appropriate to the regulatory process; it is what Congress intended for *these* regulations. [*EPA* v. *National Crushed Stone Assn.*, —— U.S. —— (No. 79-770; Dec. 2, 1980) Sl. Op. 18 (quoting *E.I. du Pont de Nemours* v. *Train*, 430 U.S. 112, 138) (elision and emphasis in original)].

2. In the instant case "these regulations" are governed by §§ 3(8) & 6(b)(5) of OSHA. The former states:

> The term 'occupational . . . health standard' means a standard which requires conditions, or the adoption or use of one or more practices, means, methods, operations, or processes, reasonably necessary or appropriate to provide . . . healthful employment and places of employment.

The latter provides in pertinent part:

> The Secretary, in promulgating standards dealing with toxic materials or harmful physical agents under this subsection, shall set the standard which most adequately assures, to the extent feasible, on the basis of the best available evidence, that no employee will suffer material impairment of health or functional capacity even if such employee has regular exposure to the hazard dealt with by such standard for the period of his working life. . . .

---

[35] In these different statutes Congress has adopted a variety of approaches, some of which require a balancing of costs and benefits and other of which do not. We survey these statutes in Appendix B to this brief.

The *Benzene* case establishes that, at the least, these provisions "direct[]" the Secretary, where he makes the

> threshold finding that a place of employment is unsafe—in the sense that significant risks are present and can be eliminated or lessened by a change in practices[—] . . . to select 'the standard'—that is to say, one of various possible alternatives that satisfy the basic definition in § 3(8)—that is most protective . . . [and that is] consistent with feasibility. [Opinion of Stevens, J., Sl. Op. 32, 33 n. 48; Opinion of Marshall, J., Sl. Op. 4-7, 30-33].

"[B]oth the language and structure of the Act, as well as its legislative history, indicate that it was intended to require the elimination, as far as feasible, of significant risks of harm". *Id.* Opinion of Stevens, J., Sl. Op. 31.[36]

3. The statutory language and the legislative history show that Congress intended the Secretary to issue the most protective standards to correct significant employee health risks subject *only* to the following limitation: the Secretary is not to follow the self-defeating course of assisting employees by eliminating their entire occupation either through pursuit of the chimera of a risk-free environment or by the imposition of economic burdens beyond

---

[36] This conclusion, Justice Stevens noted, is supported also by both §§ 6(a) & 6(b)(8). "Section 6(a) requires the Secretary, when faced with a choice between two national consensus standards, to choose the more protective standard." *Id.* Sl. Op. 32, n. 47. "Section 6(b)(8), in turn,

> requires that, when the Secretary substantially alters an existing consensus standard, he must explain how the new rule will 'better effectuate' the purposes of the Act. . . . [T]his requirement . . . must be read to impose upon the Secretary the duty to find that an existing national consensus standard is not adequate to protect workers from a continuing and significant risk of harm." [*Id.*, Sl. Op. 34.]

See also § 2(b) which states OSHA's overall purpose—*viz.*, "to assure so far as possible every working man and woman in the Nation safe and healthful working conditions and to preserve our human resources."

the capacity of their industry to bear. Congress understood that its approach would often impose substantial costs on an industry, costs that might be beyond the financial capacity of the marginal employers. But Congress' judgment was that the expenditures made to protect workers against significant health risks should be considered reasonable and necessary costs of doing business to be reflected in the regulated industry's prices.

a. The language of §§ 3(8) and 6(b)(5) does not contain a hint that the Secretary, as a prerequisite to regulation, must value the elimination or substantial diminution of a significant health risk and assess whether that value is in reasonable balance with the compliance costs of the regulation. The basic thrust of the first sentence of § 6(b)(5), which with regard to the regulation of "toxic materials and harmful physical agents" particularizes the general definition of a "standard" in § 3(8), evinces a dedication to protecting employee health: the Secretary is directed to promulgate "*the*" standard that "*most* adequately assures" that "*no* employee will suffer material impairment . . ."

To be sure, these sections are not without terms of limitations: the regulation is to be directed to "*toxic* materials or *harmful* physical agents"; the unhealthy condition that the regulation seeks to prevent must be a "*material* impairment"; the regulation "must be *reasonably necessary* and *appropriate* to provide *healthful* employment"; and the goal of worker protection is to be pursued "to the extent *feasible*." But these limitations do not import an obligation to weigh the benefits of regulation against the costs. At most, they suggest that the Secretary is required to show that the condition he intends to regulate constitutes a significant threat to health (regulate "*toxic* materials or *harmful* physical agents" to prevent a "*material* impairment"), that the proposed regulation promises to end, or, in substance, to correct, that unhealthy condition (that it is "*reasonably* necessary

and *appropriate* to provide *healthful* employment"),[37] and that the proposed regulation is "capable of being done, executed or effected; possible of realization" [38] (is "feasible").

On the face of the statute, then, once the Secretary determines that a toxic substance in the workplace poses a significant risk of a material health impairment to exposed employees, his obligation is to promulgate the standard which, within the limits of what is possible, eliminates or substantially reduces that risk—the most protective standard feasible.

b. The legislative history of OSHA shows that Congress meant exactly what the statutory language says.

(i) *The § 6(b)(5) Debate.* The first sentence of § 6 (b) (5), as we have seen, specifies the criteria for estab-

---

[37] As Mr. Justice Marshall observed in the *Benzene* case:

> "[R]easonably necessary or appropriate" clauses are routinely inserted in regulatory legislation, and in the past such clauses have uniformly been interpreted as general provisos that regulatory actions must bear a reasonable relation to those statutory purposes set forth in the statute's substantive provisions. See, e.g., *FCC* v. *National Citizens Committee for Broadcasting*, 436 U.S. 775, 796-797 (1978); *Mourning* v. *Family Publications Service, Inc.*, 411 U.S. 356, 369 (1973); *Thorpe* v. *Housing Authority of the City of Durham*, 393 U.S. 268, 280-281 (1969). . . . This principle, of course, reflects the common understanding that the determination of whether regulations are "reasonably necessary" may be made only by reference to the legislative judgment reflected in the statute; it must not be based on a court's own, inevitably subjective view of what steps should be taken to promote perceived statutory goals. [Opinion of Marshall, J., Sl. Op. 21-22.]

Against this background, and in light of the fact that, so far as we have ascertained, there is not a word in the legislative history expanding on or even referring to the language of that provision, § 3(8) cannot support the conclusion that OSHA requires the Secretary to weigh the benefits of regulation against the costs. See also *infra* pp. 35-39.

[38] Webster's Third New International Dictionary, 831 (1961) (defining "feasible").

lishing health standards.[39] The evolution of those criteria is a development on the theme stated by Senator Dominick, who was the spokesman in the Senate for the Nixon administration and a principal participant in shaping § 6(b)(5):[40]

> The duty to set standards and produce criteria for standards implies that the criteria and the standards will be as effective as possible; not that they will produce a perfect environment. No human effort can produce a perfect environment no matter how hard we try. [Leg. Hist. 376.]

---

[39] The remainder of that provision states:

> Development of standards under this subsection shall be based upon research, demonstrations, experiments, and such other information as may be appropriate. In addition to the attainment of the highest degree of health and safety protection for the employee, other considerations shall be the latest available scientific data in the field, the feasibility of the standards, and experience gained under this and other health and safety laws.

It is inherently unlikely that this language, which was adopted by the Senate Committee, informs a proper understanding of the first sentence of § 6(b)(5) as amended on the Senate floor to clarify the meaning of the Committee bill. See pp. 31-35, *infra*. And in fact, the final two sentences do not alter the substantive criteria for health standards stated in the first sentence. Those sentences merely set forth the types of evidence the Secretary is to consider in carrying out the mandate of the first sentence—types of evidence which include not only "research, demonstrations, [and] experiments," but also "such other information as may be appropriate."

[40] Senator Dominick was the sponsor of S. 4404, introduced on behalf of the Nixon Administration as a substitute for S. 2193 (the "Williams bill") after it became apparent that the latter bill would be reported out of the Committee on Labor and Public Welfare. See Legislative History of the Occupational Safety and Health Act of 1970 (Leg. Hist.) 73, 510. (On the Senate floor, the Dominick substitute was tabled by a vote of 41 to 39 the day before S. 2193 was passed. Leg. Hist. 448-450). Senator Dominick's prominent role in the development of the legislation was noted by his fellow Senators. For example, Senator Javits observed that Senator Dominick's "efforts had a vital impact on the bill in terms of principle and fairness. . . ." Leg. Hist. 526. See also Leg. Hist. 527 (remarks of Senator Williams).

The legislative process in this instance was a search for a formula that would provide health standards "as effective as possible," while precluding the elimination of risks by eliminating the affected occupation or industry. The effort was to advance toward the ideal of worker health and safety while recognizing the limits on our ability both to maintain an industrial society and to provide a risk free environment.

House and Senate consideration of OSHA proceeded on virtually a simultaneous schedule. In the House the Act began as "the Daniels bill," H.R. 16785; in the Senate it was introduced as "the Williams bill," S. 2193. Neither bill contained a provision setting the criteria governing the issuance of toxic substance standards.[41] That provision was added to each measure in committee.[42]

The provision governing issuance of health standards reported by the House Committee on Education and Labor on July 9, 1970, contained no "feasibility" limitation. The Secretary was to be required to

> set the standard which most adequately assures, on the basis of the best available professional evidence, that no employee will suffer any impairment of health or functional capacity, or diminished life expectancy even if such employee has regular exposure to the hazard dealt with by such standard for the period of his working life.[43]

On October 6, 1970, the Senate Committee on Labor and Public Welfare reported out virtually the same provision but with one significant change: the words "and feasibly" were added so that the Secretary's mandate was

---

[41] See Leg. Hist. 721, 728-732 (Daniels bill), 1, 6-7 (Williams bill).

[42] The standard setting criteria added by the two committees were applicable to all standards (see materials cited at p. 35 and n.56, *infra*), but as enacted the first sentence of § 6(b)(5) is framed to apply solely to standards for "toxic materials and harmful physical agents."

[43] H.R. Rep. No. 91-2191, *supra* at 4, Leg. Hist. 834.

to "set the standard which most adequately *and feasibly* assures. . . ." [44] This additional language resulted from an amendment offered in Committee by Senator Javits, the ranking Republican and a key figure throughout the Senate's deliberation on OSHA.[45] Senator Javits explained that his amendment "was an improvement over the Daniels bill [because the latter as reported out of committee in the House] might be interpreted to require *absolute* health and safety in all cases, regardless of feasibility. . . ." [46]

The Senate Committee report that accompanied S. 2193 made clear the Committee's understanding of the Javits

---

[44] Leg. Hist. 204, 242.

[45] See e.g., Leg. Hist. 1151.

[46] S. Rep. No. 91-1282, *supra* at 58 (individual views of Senator Javits), Leg. Hist. 197 (emphasis added). Senator Javits described his "feasibility" amendment as an improvement over not only the Daniels bill, but also "the [original] Administration bill which contain[ed] no criteria for standards at all." *Ibid.* That bill, S. 2788, had been introduced by Senator Javits on August 6, 1969. See S. Rep. No. 91-1282 at 5, Leg. Hist. 145. Its provisions regarding the setting of standards appear at Leg. Hist. 31, 36-42.

ATMI states that "Senator Javits, the author of the original Administration bill (S. 2788), took the position that OSHA standards should be 'feasible' in the sense of being 'reasonable' and 'practicable' as well as technologically achievable." ATMI Br. 32-33. This misstates Senator Javits' role and his words. President Nixon's message accompanying the bill drafted by his Administration "described" the provision calling for a report on "technical feasibility, reasonableness, and practicality" as a "report on the feasibility of the proposed standards." 115 Cong. Rec. 22511, 22517. Thus Senator Javits did not author S. 2788 or "describe" the report in such terms at all. Senator Javits merely asked that the President's lengthy message be printed in the Congressional Record. 115 Cong. Rec. 22511. Rather than endorsing the message, Senator Javits disassociated himself from the Administration's bill on a variety of issues, saying that "it may be desirable to go somewhat further than this bill does in strengthening the hand of the Federal Government in this area." 115 Cong. Rec. 22512. When Senator Javits actually described his feasibility amendment he consistently used only the word "feasible" and never equated that term with "reasonable" or "practical." Leg. Hist. 197, 418.

amendment by paraphrasing the bill's language in the following terms:

> [S]tandards should be directed at assuring, *so far as possible*, that no employee will suffer impaired health or functional capacity, or diminished life expectancy, by reason of exposure to the hazard involved, even though such exposure may be over the period of his entire working life.[47]

The "feasibility" language reported by the Committee was refined on the floor of the Senate as the final matter considered prior to passing S. 2193. Notwithstanding the inclusion in the Committee bill of both § 3(8) and the Javits amendment, several Senators—most notably Senator Dominick—expressed concern that § 6(b)(5) could nevertheless be read to accomplish what Senator Javits had sought to avoid. Senator Dominick explained:

> [Section 6(b)(5)] is inherently confusing and unrealistic. It could be read to require the Secretary to ban all occupations in which there remains *some* risk of injury, impaired health, or life expectancy. In the case of all occupations, it will be impossible to eliminate all risks to safety and health. Thus, the present criteria could, if literally applied, close every business in this nation. In addition, in many cases, the standard which might most "adequately" and "feasibly" assure the elimination of the danger would be the prohibition of the occupation itself.[48]

In light of that concern, Senator Dominick proposed an amendment to delete from § 6(b)(5) the entire sentence setting forth the criteria for the promulgation of standards.[49]

Throughout the floor debate that ensued, Senator Dominick's remarks were consistently directed at a single

---

[47] S. Rep. No. 91-1282, *supra* at 7, Leg. Hist. 147 (emphasis added).

[48] Leg. Hist. 367; emphasis in original.

[49] Amendment No. 1054, Leg. Hist. 365-366.

concern: that the language proposed by the Committee could be read as requiring an absolutely risk-free workplace—a requirement that could be met only by shutting down entire industries and by eliminating occupations.[50] He gave the following example:

> How in the world, . . . during a working day of any one driving a bus . . . can we set standards that will make sure he will not have any risk to his life for the rest of his life? It is totally impossible for this to be put in a bill; and yet it is in the committee bill.[51]

As part of his argument, Senator Dominick stressed also that work of any nature necessarily has an impact on the human body and, ultimately, on life expectancy, and that seeking to eliminate all such effects would amount to a ban on all employment. In this connection,

---

[50] It is unrealistic to attempt, as [§ 6(b)(5)] apparently does, to establish a utopia free from any hazards. Absolute safety is an impossibility and it will only create confusion in the administration of this act for the Congress to set clearly unattainable goals.

* * * * *

The difficulty of the language I am dealing with here and that I am trying to delete is the requirement that the Secretary, in establishing standards, must assure that there will not be any risk at all.

* * * * *

Almost any kind of occupation one can think of has something which is inherently hazardous simply by the fact that one is living and breathing and there is no way a criteria [sic] can be established so that an employee would not be faced with some risk for the period of his working life.

* * * * *

Let us take the case of a bus driver. There is no possible way that a bus driver for the rest of his life could be assured that he is not going to get regular exposure to these hazards. By the very nature of driving a bus over the road, no matter how many safety tires and signals are on the bus, it is a hazardous occupation.

Leg. Hist. 480-481. See also Leg. Hist. 345-346, 400-401.

[51] Leg. Hist. 423.

Senator Dominick stated that "[s]imply being in a work environment where one is responsible for certain duties . . . produce[s] in most people impaired health, and it certainly diminishes life expectancy to some extent." [52] In the same vein, Senator Saxbe noted that "[w]orking itself is apt to diminish one's life expectancy. If one wants to stay home in bed, he probably will live longer than by standing at the plant and doing his job." [53]

Senator Dominick summed up his objections to the Senate Committee version of § 6(b)(5) in the following terms:

> Any administrator responsible for enforcing the statute will be faced with an impossible choice. Either he must forbid employment in all occupations where there is any risk of injury, even if the technical state of the art could not remove the hazard, or he must ignore the mandate of Congress. . . .
>
> The confusion inherent in this provision will, in my opinion, render it no more than a hortatory admonition to the Secretary to fulfill his responsibilities under the act. [T]here is no point in putting in criteria which cannot be met.[54]

No concern of any other nature with regard to § 6(b)(5) was raised by any Senator. The view that the Secretary was to require what is "possible," not what is perfect, where the latter choice would be to forbid "employment in [an] occupation where there is any risk of injury" reflected the consensus of the Senate. When that became apparent, the chief spokesman on both sides of the aisle—Senators Williams, Javits and Dominick—translated that consensus into a modification of the Committee's version of § 6(b)(5) which was "agreeable to all." [55]

---

[52] Leg. Hist. 376.

[53] Leg. Hist. 337.

[54] Leg. Hist. 481.

[55] Leg. Hist. 502.

That modification was embodied in a substitute amendment, introduced by Senator Dominick, consisting of the language of § 6(b)(5) as eventually enacted. In the colloquy immediately preceding passage of that amendment Senators Dominick and Williams confirmed the amendment's purpose:

> Mr. Dominick: . . .
>
> What we were trying to do in the bill—unfortunately, we did not have the proper wording or the proper drafting—was to say that when we are dealing with toxic agents or physical agents, we ought to take such steps as are feasible and practical to provide an atmosphere within which a person's health or safety would not be affected. Unfortunately, we had language providing that anyone would be assured that no one would have a hazard, . . . no one would have any problem for the rest of his working life.
>
> It was an unrealistic standard. As modified, we would be approaching the problem by looking at the problem and setting a standard or criterion which would not result in harm.
>
> * * * *
>
> It is my understanding, if I may say so, that what we are doing now is to say that the Secretary has got to use his best efforts to promulgate the best available standards, and in so doing, that he should take into account that anyone working in toxic agents or physical agents which might be harmful may be subjected to such conditions for the rest of his working life, so that we can get at something which might not be toxic now, if he works in it a short time, but if he works in it the rest of his life it might be very dangerous; and we want to make sure that such things are taken into consideration in establishing standards; is that correct?
>
> Mr. Williams of New Jersey: That is exactly correct. . . . I think it is clear, the objectives have been stated, and it strengthens the objectives of

> standards that will protect against physical impairment and loss of function.[56]

The first sentence of § 6(b)(5) was therefore modified to apply only to "toxic materials and harmful physical agents," rather than to every type of work hazard; to change the phrase "adequately and feasibly assures" to "adequately assures, to the extent feasible;" to refer to "material impairment" rather than to "any impairment;" and to delete the vague concept of "diminished life expectancy." As so amended, the Senate passed S. 2193.

The House, meanwhile, passed a substitute bill which did not contain criteria governing the setting of health standards.[57]

In conference, the House receded and accepted § 6(b)(5) precisely as the Senate had passed it. In receding, the House insisted on an amendment which became § 6(b)(6)(A). As described in the Conference Report, that section provides:

> that employers may petition for a temporary variance from an occupational health or safety standard if they are unable to comply with a standard for the following limited reasons: unavailability of professional or technical personnel or of necessary materials or equipment or because necessary construction or alteration of facilities cannot be completed in time. *Economic hardship is not to be a consideration for the qualification for a temporary extension order.*[58]

(ii) *Congressional Consideration of Costs.* A more general review of the debate preceding OSHA's enactment confirms the natural implication of the emphasized portion of the Conference Report: Congress, understanding

---

[56] Leg. Hist. 502-503.

[57] Leg. Hist. 1092-1118.

[58] H.R. Rep. No. 91-1765, 91st Cong., 2d Sess. 35, Leg. Hist. 1188 (emphasis supplied).

perfectly that the statute would require American industry to make large outlays of money, concluded that workers should not subsidize the production of goods with their health and that the cost of health and safety protection at the workplace should be counted as a cost of doing business reflected in the prices of goods in the market place.

Senator Williams, who introduced the initial Senate version of the bill and served as floor manager, explained the economic philosophy of OSHA as follows: "We know the costs w[ill] be put into consumer goods but that is the price we should pay for the 80 million workers in America." [59]

Senator Eagleton, another proponent, added:

> The costs that will be incurred by employers in meeting the standards of health and safety to be established under this bill are, in my view, reasonable and necessary costs of doing business. Whether we, as individuals, are motivated by simple humanity or by simple economics, we can no longer permit profits to be dependent upon an unsafe or unhealthy worksite.[60]

The judgment that the costs of employee health and safety should be spread through the economy, rather than be borne by workers, was described by Senator Yarborough, a co-sponsor of the Senate bill, in response to interest group complaints that such legislation would prove too expensive:

> One may well ask too expensive for whom? Is it too expensive for the company who for lack of proper safety equipment loses the service of its skilled employees? Is it too expensive for the employee who loses his hand or leg or eyesight? Is it too expensive for the widow trying to raise her children on meager allowance under workmen's compensation and social

---

[59] Leg. Hist. 444.

[60] Leg. Hist. 1150-1151.

> security? And what about the man—a good hard-working man—tied to a wheel chair or hospital bed for the rest of his life? That is what we are dealing with when we talk about industrial safety.
>
> We should have uniform standards so that no one industry would gain an advantage over any other industry. It would be far cheaper for our economy. It would save money in workmen's compensation premiums.
>
> We are talking about people's lives, not the indifference of some cost accountants. We are talking about assuring the men and women who work in our plants and factories that they will go home after a day's work with their bodies intact. We are talking about assuring our American workers who work with deadly chemicals that when they have accumulated a few years seniority they will not have accumulated lung congestion and poison in their bodies, or something that will strike them down before they reach retirement age.[61]

The legislative materials reveal no dissent from the approach stated by these Senators. No legislator espoused the theory that the protection of worker health should be compromised on the basis of a cost-benefit assessment.

Congress was fully aware of the consequences of its determination. Congress realized, for example, that the additional costs of doing business that would be required to comply with OSHA standards might threaten the viability of a great number of small employers. The legislative response was not, however, to dilute the mandate

---

[61] Leg. Hist. 510. See also, e.g., Leg. Hist. 1030-1031 (remarks of Representative Dent):

> Although I am very much disturbed over adding new costs to the operation of our production facilities . . . I would say there is a greater concern and that must be for the production men who do the producing—the men who work in the service industries and the men and women who daily go out and keep the economy moving and make it safe for all of us to live and to work and to be able to prosper in it.

of § 6(b)(5) (or the other substantive provisions of the Act) or to exempt small employers from its reach. To have done so would have undermined a central premise of the regulatory scheme:

> Although many employers in all industries have demonstrated an exemplary degree of concern for health and safety in the workplace, their efforts are too often undercut by those who are not so concerned. Moreover, the fact is that many employers—particularly smaller ones—simply cannot make the necessary investment in health and safety, and survive competitively, unless all are compelled to do so. The competitive disadvantage of the more conscientious employer is especially evident where there is a long period between exposure to a hazard and manifestation of an illness. In such instances a particular employer has no economic incentive to invest in current precautions, not even in the reduction of workmen's compensation costs, because he will seldom have to pay for the consequences of his own neglect.[62]

Rather, Congress established in § 28 of the Act a program to provide loans to small businesses to be used to achieve compliance with the standards promulgated by the Secretary. Senator Dominick stated the intent of § 28:

> [The small business program] permits the Secretary to make loans to small businesses wherever the standards that are set by the National Government are so severe as to have caused a real and substantial economic injury. Under those circumstances the Secretary is entitled, through the Small Business Administration, to make loans to those businesses to get them over the hump, because of the need for the new equipment, or because of new conditions within the shop, which would permit them to continue in operation.
>
> I think this is a very significant and important provision for minimizing economic injury which

---

[62] S. Rep. 91-1282, *supra*, at 4; Leg. Hist. 144.

could occur if the bill resulted in situations which would have very serious effects on businesses.[63]

4. The Congressional judgment expressed in the statutory scheme just outlined is that the elimination or substantial reduction of significant worker health risks justifies the costs of the most protective standard that does not endanger the productive activity that occasioned those risks. That judgment constitutes a rational approach to the problem of assuring that "industrial hygiene resources are not being squandered or misallocated in a fashion that produces very little health benefit . . . ." ATMI Br. 40. Such allocative judgments are precisely the kind the Constitution delegates to *Congress*. It is the legislative branch that is to "decide the order of priorities in a given area." *TVA* v. *Hill*, 437 U.S. 153, 194.

The Congressional judgment stated in OSHA is indeed, if that is deemed relevant, eminently sound, given the state of our knowledge and wisdom. On the other hand, ATMI's posit that the Secretary and the judiciary should "assess[] . . . costs and risk reduction benefits" and determine whether "there is a reasonable relationship between the two" (Br. 39), quite aside from its deficiency in leaving the Secretary and the courts at large, creates only the beguiling illusion of scientific rigor and logical decisionmaking. In reality such assessment will at best be accurate only within a wide range. And, of course, there is no agreement on the mediating principle for determining the "reasonable relationship" between eliminating or substantially diminishing significant worker health risks and the compliance costs entailed.[64] See,

---

[63] Leg. Hist. 525.

[64] These difficulties are enormously increased by ATMI's embellishment that the Secretary is to consider "the impact that [the proposed] standard would have on the industry's ability to address other, more significant health and safety risks in the future . . . ." ATMI Br. 41.

The "logic" of this suggestion requires that the Secretary, before he can promulgate a standard to protect employees against any

e.g., House Comm. on Interstate and Foreign Commerce, Subcomm. on Oversight and Investigations, *Federal Regulation and Regulatory Reform*, 95th Cong., 1st Sess. 515 (1976) ("[t]he limitations on the usefulness of benefit/cost analysis in the context of health, safety, and environmental regulatory decision-making are so severe that they militate against its use altogether").

Congress need not, of course, have taken these difficulties into account. Certainly, however, the legislature was not obliged to ignore them.

B. The Statutory Principles Applied

It follows from the language of the statute, read in light of its legislative history and the *Benzene* case, that the test for determining whether a standard promulgated by the Secretary to regulate a "toxic material or harmful physical agent" meets the requirements of OSHA has

---

health hazard, must inventory the other hazards possibly faced by those employees and then compare the relative costs and benefits of the proposed standard with the costs and benefits of regulating each of the other possible hazards. And industry would read the Act to require the Secretary to embark on that task despite the recognition by the sponsors that:

> In the field of occupational health . . . [there is a] lack of information and records, ...
>
> . . . [M]aterials long in industrial use are only now being discovered to have toxic effects. . . . [T]echnological advances and new processes in American industry have brought numerous new hazards to the workplace. . . . It is estimated that every 20 minutes a new and potentially toxic chemical is introduced into industry. New processes and new sources of energy present occupational health problems of unprecedented complexity.
>
> Recent scientific knowledge points to hitherto unsuspected cause-and-effect relationships between occupational exposures and many of the so-called chronic diseases—cancer, respiratory ailments, allergies, heart disease, and others.

S. Rep. No. 91-1282, *supra* at 2-3, Leg. Hist. 142-143. Nevertheless under industry's construct, to do anything the Secretary would have to investigate and evaluate everything.

three parts: First, whether the "place of employment is unsafe—in the sense that significant risks are present and can be eliminated or lessened by a change in practices." Opinion of Stevens, J., Sl. Op. 32. Second, whether of the possible available correctives the Secretary has selected "*the* standard . . . that is most protective." *Ibid.* Third, whether that standard is "feasible." The standard here meets that test.

1. *Significant Risk.* The risk of contracting chronic or acute respiratory disease from exposure to cotton dust at the workplace is precisely the type of risk that Congress determined should be eliminated or substantially diminished through OSHA health standards. The Senate Report on OSHA states:

> In the field of occupational health the view is particularly bleak. . . . Occupational diseases which first commanded attention at the beginning of the Industrial Revolution are still undermining the health of workers. . . . Workers in the dusty trades still contract various respiratory diseases.
>
> * * * *
>
> Studies of particular industries provide specific emphasis regarding the magnitude of the problem. For example, despite repeated warnings over the years from other countries that their cotton workers suffered from lung disease, it is only within the past decade that we have recognized byssinosis as a distinct occupational disease among workers in American cotton mills. Recent studies now show that this illness, caused by the dust generated in the processing of cotton, and resulting in continuous shortness of breath, chronic cough and total disablement, affects substantial percentages of cotton textile workers. In some states as many as 30% of those in the carding or spinning rooms have been affected, and it has been estimated that as many as 100,000 active or retired workers currently suffer from his disease.[65]

---

[65] S. Rep. 91-1282, *supra* at 2-3; Leg. Hist. at 142-143.

The record in this case bears out Congress' assessment: Textile workers are permanently disabled by chronic obstructive pulmonary disease at more than three times the rate of comparable populations not exposed to cotton dust. By "conservative" estimate, approximately 35,000 present or former textile workers are currently permanently disabled by that disease.

The Merchant study credited by the Secretary found that 26% of the approximately 200,000 workers in yarn manufacturing operations (52,000 workers) would contract some form of acute byssinosis if exposed at a concentration of 500 ug/m^3 of elutriated cotton dust—an exposure level equivalent to that permitted by the previous federal government standard.

The Merchant study also broke down the data on prevalence rates by grade of byssinosis. This breakdown shows that the prevalence of Grade 2 byssinosis for yarn manufacturing operations is 8% (approximately 16,000 workers) at an exposure level of 500 ug/m^3. And the authors of the study emphasized that the data underestimated the prevalence rates of Grade 2 byssinosis and of chronic obstructive pulmonary disease.

Finally, the Merchant study showed that at the PEL set by the standard the prevalence of byssinosis in yarn manufacturing would be reduced to 13%, and the prevalence of Grade 2 byssinosis would fall to 3%. Thus, this PEL would reduce the number of workers suffering from acute byssinosis at any given time by at least 26,000; and the number of workers suffering from Grade 2 byssinosis at any given time would be reduced by at least 10,000. A comparable reduction in the incidence of chronic obstructive pulmonary disease would follow. See *supra* at 11.

The standard would thus substantially diminish the significant health risk faced by cotton textile workers.

2. *The Most Protective Standard.* ATMI does not contend that the Secretary failed to adopt the "most pro-

tective" standard. Rather, the contention is that at the rulemaking proceeding ATMI and individual cotton textile companies proposed an "alternative" compliance scheme, which they claimed would provide cotton textile workers health protection "not significantly" less than that afforded by the Secretary's final standard and at a much lower cost. ATMI Br. 10-12. ATMI challenges the Secretary's decision not to adopt that alternative. *Id.* at 48.

If the Secretary were faced with two possible compliance schemes of equivalent efficacy, one of which is less expensive than the other, both reason and the statute point toward the lower cost option. That is not the situation here. The ATMI alternative in fact falls far short of offering health protection equivalent to that of the regulatory approach adopted by the Secretary.

Under ATMI's proposal [66] all employers in the cotton textile industry would be permitted to continue to expose their workers to levels of cotton dust at least as high as those permitted under the prior federal standard.[67] A worker exposed to those high dust concentrations would be afforded no health protection of any type until his employer was satisfied that the individual had already contracted byssinosis. That determination would be made on the basis of a medical surveillance program under which a worker would be considered to have contracted byssinosis only if it were clear, from both pulmonary function tests [68] and the worker's responses to a company-administered questionnaire, that such a diagnosis was required. Ex. 160 at 22-28 (App. 381-383).

---

[66] ATMI's proposal is described in its post-hearing brief to the agency, Ex. 160 at 14-29 (App. 372-384).

[67] In the operations of opening through spinning, ATMI called for a PEL of 500 ug/m^3, a level equivalent to the prior federal standard. See note 14, *supra*. In weaving operations, ATMI urged that the PEL be raised to 1000 ug/m^3, a level substantially higher than that permitted by the existing standard. See note 18, *supra*.

[68] See note 8, *supra*.

Each worker so identified would be "issued and required to wear a respirator, without regard to the [dust] levels to which he or she may be exposed." *Id.* at 28 (App. 383). After a period of time, further pulmonary function tests would be administered by the company and, if the worker continued to exhibit significant loss of lung function, he would be examined by a physician. *Ibid.* Consideration would then be given to the question whether the affected worker should be transferred to a job with a lower exposure level. In this regard, ATMI stated in its submission to the Secretary:

> It must be emphasized that such transfer should be effected only with the employee's agreement and only after consideration is given to a multitude of factors, including age, length of employment in the present area, and the extent of decline or decrement in lung function. *Ibid.*

Even after this sequence of events, if a company entertained any doubt whether a worker's impaired health resulted from exposure to cotton dust, no transfer would be offered. *Id.* at 28-29 (App. 383).

The underlying premise of ATMI's alternative is that workers should be afforded no protection from the acute health effects of byssinosis and that the standard's sole health objective should be to reduce the incidence of chronic obstructive pulmonary disease. But, as the Secretary found, the acute effects of byssinosis are "significant . . . in themselves and should be prevented insofar as possible." 43 Fed. Reg. 27354, col. 2. Under ATMI's approach, at any given time as many as 26,000 textile workers would suffer acute respiratory ailments that could have been prevented by reducing exposure levels as required by the Secretary's standard. Of that number, as many as 10,000 would suffer Grade 2 byssinosis. See *supra* at 11. No medical surveillance program can assure that the disease will be identified prior to Grade 2. As Dr. Merchant testified, "one could miss true *grade 2* byssinosis with a medical surveillance pro-

gram that is competent, is professional, well run." Tr. 1137 (App. 439) (emphasis added).[69] In large part, this is because there is no orderly progression from one grade of byssinosis to another. See pp. 4-5, *supra*.

At least by Grade 2, acute byssinosis constitutes a "material impairment of health or functional capacity" within the meaning of § 6(b)(5). And while it is not necessary to our point, or to the validity of the standard, we note that the record supports the conclusion that the lower grades of byssinosis also constitute such an impairment. Indeed, while ATMI disputes this conclusion

---

[69] In this regard, the deficiencies in ATMI's approach are compounded by the fact that detection of byssinosis depends in large part on the symptoms an employee reports in response to a standard questionnaire. Experience with this procedure has shown that workers often do not disclose health impairments to their employers "especially . . . when [they] fear that forced transfer or early retirement might flow from [such disclosure]." 43 Fed. Reg. 27359, col. 2. See also Tr. 1039 (App. 436) (Dr. Merchant); Ex. 6, No. 24 at 265 (App. 24) (Dr. Bouhuys).

Further, under ATMI's proposal, a worker would be afforded no protection from exposure to cotton dust unless a company doctor determined that protection was necessary for that individual. But the record demonstrates that doctors associated with the industry have been exceedingly reluctant to diagnose workers as suffering from byssinosis. See e.g., Tr. 2148-50 (App. 455-456) (Willie Baldwin); Statement of Eva Bradshaw (Ex. 54) at 1-2 (App. 208-210); Statement of Elsie Morrison (Ex. 54) at 1-2 (App. 210-212); Statement of William Tyndall (Ex. 54) at 1 (App. 215-216); Ex. 54A at 14 (App. 219) (Carolina Brown Lung Ass'n); Tr. 2143-46 (App. 454-455) (Charles Hassell). Compare Ex. 48 at 3-9 (App. 203-207) (Statement of Dr. M. C. Battagelli) with 43 Fed. Reg. 27353, cols. 1-2. In part, this may be a reflection of the attitude harbored by some of those doctors that "byssinosis itself, grades ½, 1 and 2 . . . really doesn't constitute much of a disease" [Tr. 1604 (App. 445) (Dr. Russell Harley)]—an attitude which the Secretary found to be outmoded and simply wrong on the basis of the record evidence. The reluctance of company doctors to diagnose a worker as suffering from cotton dust-induced lung disease may also reflect the fact that such a diagnosis could subject a company to workers' compensation liability. Ex. 82 at 12 (App. 323).

as to Grade ½ byssinosis, its brief is conspicuously silent on this point with regard to Grade 1 and above. ATMI Br. 4-5.

Accordingly, because the ATMI alternative tolerates subjecting large numbers of cotton textile workers, who would be protected by the Secretary's standard, to acute byssinosis, including Grade 2 byssinosis, the proposal is, at the threshold, significantly less protective than the standard.

The "industry alternative" is likewise inadequate as a means of reducing the prevalence of chronic obstructive pulmonary disease. ATMI promises that its scheme, while admittedly ignoring the acute stages of byssinosis, would "protect[] against any risk of disabling or irreversible lung damage . . ." ATMI Br. 11-12. The facts are to the contrary. As noted above, there is no orderly progression from one grade of byssinosis to another. The point at which the chronic stage is contracted varies from individual to individual.[70] Medical surveillance cannot therefore ensure timely identification of the disease before the irreversible stage is reached.

Moreover, even if employers were able to *identify* workers with byssinosis before those workers have chronic obstructive pulmonary disease, ATMI's proposal would not protect those identified. ATMI posits that workers who have contracted the acute forms of byssinosis "could then be protected . . . by selective use of respirators or transfer to low exposure areas, as medically appropriate for the individual concerned." ATMI Br. 11-12. As the Secretary found, however, respirators cannot serve as a long-term solution to worker exposure to cotton dust. Workers wearing respirators must exert additional effort in order to breathe. Workers already suffering from reduced breathing capacity—including by definition those with byssinosis—generally cannot tolerate this added bur-

---

[70] See pp. 4-5, *supra*.

den. 43 Fed. Reg. 27384, col. 3.[71] Yet ATMI's "solution" would be to provide respirators precisely to the workers who cannot use them. Moreover, it is difficult to fit a respirator properly, and there is no satisfactory method for determining when a proper fit has been achieved; as a result, there can be no assurance that a respirator is actually working. 43 Fed. Reg. 27384, col. 3.[72] Finally, while respirators provide questionable worker protection, they create additional hazards "by interfering with vision, hearing and mobility" and the ability to communicate. 43 Fed. Reg. 27384, col. 3.[73]

Apart from respirators the only control measure incorporated in the ATMI alternative is that mills would provide opportunities, on a selective basis, for workers to transfer to low exposure areas when deemed appropriate by their employer. This aspect of ATMI's proposal

---

[71] See Tr. 1326 (App. 442) (Dr. Baier); Ex. 80a at 6-7 (App. 312-315) (Prof. Burgess); Ex. 82 at 4, 8 (App. 317-318, 321) (ACTWU); Ex. 54A at 11 (App. 217) (Carolina Brown Lung Ass'n); Tr. 2132-33 (App. 453) (employee Vernon Sandlin); Tr. 3015-16 (App. 482-483) (employee Frank Davis). Indeed, the record shows that even for individuals not already impaired, the physical demands of wearing a respirator are such that workers cannot use them on a long term basis; even where exposure to the most dangerous toxic substances is concerned, respirator usage for more than a few hours at a time is unheard of in American industry. Tr. 1325-28 (App. 441-444) (Drs. Baier and Schutz); Tr. 2999-3000, 3010 (App. 481-482) (Prof. Burgess); Tr. 501 (App. 413-414) (Bruce Held); Ex. 80a at 5 (App. 311-312) (Prof. Burgess).

[72] See Ex. 80a at 2-5 (App. 309-311) (Prof. Burgess); Ex. 15 at 2 (App. 165) (Bruce Held); Ex. 82 at 3-4, 8 (App. 317, 321) (ACTWU); Ex. 54A at 11 (App. 217) (Carolina Brown Lung Ass'n); Tr. 3040-41 (App. 484) (Eric Frumin); Tr. 1326-27 (App. 443) (Dr. Baier); Tr. 3016 (App. 483) (employee Frank Davis). The inability to obtain a proper facial fit is particularly a problem for female employees, who constitute a significant percentage of the workforce in the cotton textile industry. Tr. 3040-41 (App. 484) (Eric Frumin).

[73] See, e.g., Ex. 15 at 2 (App. 165-166) (Bruce Held); Tr. 3018 (App. 483-484) (employee Alvah Mabe).

necessarily rests on the premise that the number of workers to be transferred would be "manageable." Ex. 6, No. 57 at 3-5 (App. 58-60) (Dr. Imbus).[74] But at the industry-proposed PEL one out of four textile workers would have acute byssinosis. The many thousands of employees who would have to be transferred would not on industry's own estimate be "manageable".

Even if a sufficient number of transfer opportunities could be made available, ATMI's approach is inadequate. Dr. Merchant testified, on the basis of his knowledge of both the textile and coal mining industries, that if such transfers were offered, many workers would be precluded from accepting the offer by the attendant loss of earnings or other adverse employment consequences. Tr. 1139-40 (App. 441). Those workers would be required by financial compulsion to remain exposed to the unsafe dust levels that had already impaired their health. On the other hand, each employee who did transfer to a job with a lower level of exposure would have to be replaced. Each replacement, in turn, would be subjected to the high dust levels that caused his predecessor to contract byssinosis. Thus in the name of OSHA compliance, ATMI's program is likely to result in increasing the number of workers who contract acute byssinosis.

In short, ATMI's alternative offers only an illusion of worker protection,[75] rather than the reality OSHA

---

[74] ATMI itself recognized the inherent limitations of any transfer program, stating that, at most, ten (10) percent of the employees in a mill could be transferred. Ex. 60 at 57 (App. 384-385) (ATMI Comments); Tr. 1881-82 (App. 445-446) (Dr. Imbus).

[75] ATMI's chief witness stated that while

> [s]ome may feel that a medical surveillance program [including the use of respirators and transfers] will be an economical alternative for institution of dust control[,] I cannot subscribe to [that] position. * * * Medical surveillance programs are not a substitute for diligent efforts to control dust. [Ex. 6, No. 57 at 2, 11]

ATMI maintains, however, that the effectiveness of its alternative was "demonstrated" by the surveys submitted by ATMI and sev-

demands. In *Whirlpool Corp.* v. *Marshall*, 445 U.S. 1, 11-12 (1980), the Court stated:

> The Act, in its preamble, declares that its purpose and policy is "to assure so far as possible every working man and woman in the Nation safe and healthful working conditions and to preserve our human resources . . ."
>
> * * * *
>
> To accomplish this basic purpose the legislation's remedial orientation is prophylactic in nature. . . . The Act does not wait for an employee to die or become injured. It authorizes the promulgation of health and safety standards and the issuance of citations in the hope that these will act to prevent deaths or injuries from ever occurring.

---

eral member companies regarding the prevalence of byssinosis at certain mills where various medical surveillance programs including the use of respirators and transfers had been in effect (ATMI Br. 10-11). As has been noted, the Secretary found that these surveys were not reliable. See p. 7, note 11, *supra*. But even if the results of the surveys were accepted at face value, they would lend no support to ATMI's proposal. For dust levels at the mills in question were well below the level of 500 ug/m^3 which ATMI proposes. For example, the Secretary noted that the survey conducted by Dr. Hans Weill had been commissioned by ATMI precisely for the purpose of evaluating the prevalence of byssinosis at "mills with very low doses." 43 Fed. Reg. 27355, col. 3. Dr. Weill stated that the mills he studied "undoubtedly represent the best environmental dust control in the industry" Ex. 13a at 2 (App. 158). Similarly, in the mills surveyed by Dr. Harold Imbus of Burlington Industries, 66% of the exposure levels were below 500 ug/m^3 (43 Fed. Reg. 27359, col. 2); indeed, Dr. Imbus attributed the reduction of byssinosis prevalence in those mills primarily to a reduction of dust levels. Tr. 1894-97 (App. 447-448). And in the survey of Dr. W.K.C. Morgan, "some 90-plus percent of the people . . . [were] exposed at [300 ug/m^3] or [200 ug/m^3] or even below [200 ug/m^3]." Tr. 1904-09 (App. 448-449). As the Secretary concluded, given these low dust levels the industry surveys shed no light on what would be the consequences of the much higher PEL proposed by ATMI. "It is not surprising . . . that data gathered from a worker population which has enjoyed conditions approaching those mandated . . . by this final standard show a marked improvement in worker health." 43 Fed. Reg. 27359, col. 2.

This "overriding purpose of the Act" (*id.* at 11), makes it plain that the alternative adopted by the Secretary, not the ATMI alternative, is the "most protective" standard—the standard demanded by Congress.

3. *Feasibility.* In this Court, the industry does not dispute the technological feasibility of the standard. See *supra* at 14. As to economic feasibility, the Secretary's estimate that the total cost of compliance with the standard would be approximately $550 million is supported by the record.[76] The RTI analysis of the industry's ability to finance the cost of compliance with the standard, on which the Secretary relied, showed that at cost estimates twice as high as $550 million "the cotton textile industry as a whole [would not] be seriously threatened." See *supra* at 19. For the "much less severe" actual cost requirements of the standard, the Secretary concluded "that although some marginal employers may shut down rather than comply, the industry as a whole will not be threatened by the capital requirements of the regulation." See *supra* at 19.

As we have seen (*supra* at 35-39), Congress in enacting OSHA was aware that the cost of compliance with occupational health standards would threaten the viability of marginal employers. But Congress determined that the level of worker protection is not to be determined by the lowest common denominator of economic ability to comply. To the contrary, Congress refused to dilute the mandated level of worker protection to meet the economic needs of marginal employers. Instead, the legislative solution was to establish a loan program to assist small businesses in achieving compliance with standards promulgated by the Secretary. See *supra* at 38-39.

---

[76] As we have discussed in detail, the only dispute as to the Secretary's cost estimate concerns his conclusion that the cost of compliance in the 25% of the *spinning* operations where exposure levels were in excess of 200 ug/m^3 at the time of the rulemaking would be $17.7 million. See *supra* at 15. The Secretary's conclusion is amply supported by the record. See *supra* at 16-18.

In the provisions at issue here, as in the statute considered in *National Crushed Stone, supra,*

> Congress foresaw and accepted the economic hardship, including the closing of some plants, that [regulation] would cause; and Congress . . . took certain steps to alleviate this hardship, steps which did not include allowing a . . . [relaxation of the appropriate protective standards]. [Sl. Op. 14.]

II. THE ACT AUTHORIZES THE SECRETARY TO REQUIRE EARNINGS PROTECTION FOR WORKERS WHO MUST BE TRANSFERRED TO AVOID EXCESS EXPOSURE TO COTTON DUST

Due to an anticipated shortage of the dust control equipment needed to meet the standard's PELs, the Secretary granted industry a four-year period in which to put those controls in place. *Supra,* p. 12. And the Secretary recognized that there would undoubtedly be some mills that would not come into compliance with the PELs even then. To provide at least some measure of protection, the Secretary mandated the interim use of respirators. 29 C.F.R. § 1910.1043(f)(1). The Secretary recognized also that certain workers are physically unable to wear respirators and concluded that their health could only be protected by affording them an opportunity to transfer to jobs with lower exposure levels. In this connection, the record showed that if workers were forced to take a cut in pay in order to transfer, many would be compelled by economic necessity to decline a transfer opportunity. *Supra,* p. 48. Accordingly, the standard provides:

> Whenever a physician determines that an employee is unable to wear any form of respirator, . . . the employee shall be given the opportunity to transfer to another position which is available or which later becomes available having a dust level at or below the PEL. [29 C.F.R. § 1910.1043(f)(2)(v).]

The Secretary further required that:

> The employer shall assure that an employee who is [so] transferred . . . suffers no loss of earnings or other employment rights or benefits as a result of the transfer. [*Ibid.*]

Thus, the costs associated with these transfers, like those associated with the other control measures prescribed by the standard (e.g., engineering controls and respirators), are to be borne by the employer.

ATMI does not challenge the Secretary's authority to require employers to provide workers a transfer opportunity as a means of preventing excessive exposure to a health hazard.[77] ATMI does raise, however, the "relatively narrow question" whether the Secretary has "authority to require employers to maintain the earnings . . . of employees who are [so] transferred . . ." (ATMI Br. 52).

ATMI first argues that since the statute does not *in haec verba* grant the Secretary authority to impose a "wage guarantee provision" (ATMI Br. 53), this provision of the standard should be invalidated. But the challenged provision falls well within the terms of § 6(b)(7), which authorizes the Secretary "[w]here appropriate [to] prescribe suitable . . . control procedures to be used in connection with [occupational health] hazards. . . ." Further, as mentioned, § 3(8) defines an "occupational safety and health standard" in broad terms to include "the adoption or use of one or more practices, means, methods, operations or processes, reasonably necessary or appropriate to provide safe or healthful employment and places of employment." Thus Congress chose not to prescribe a list of

> specific 'do's and don't's' for keeping workplaces safe and healthful. Industrial safety and health

---

[77] Indeed, given ATMI's proposed "alternative" (see pp. 47-48, *supra*) which relies significantly on worker transfers, ATMI could hardly argue that the statute forbids the Secretary to include such a provision in his compliance program.

problems are as complex and changing as American industry itself. They cannot be solved by a lengthy list of prohibitions spelled out in a statute.

Instead, the [Act sets] up a legal structure; that is, it . . . empower[s] an administrative agency to issue detailed safety and health regulations. . . . [Leg. Hist. 297-298 (analysis of Senator Saxbe).][78]

---

[78] ATMI notes (Br. 56) that under the Federal Coal Mine Health and Safety Act of 1969, 30 U.S.C. § 801-960, Congress guaranteed miners with pneumoconiosis the option of transferring to lower exposure levels in the mine without any attendant loss of pay. According to ATMI, the absence of any comparable express provision in OSHA evidences a legislative intent to foreclose the Secretary from imposing a similar requirement when fashioning OSHA standards. ATMI, however, overlooks a basic distinction. In the Coal Mine Health and Safety Act Congress drafted legislation for a single industry, prescribing in great detail a comprehensive program of control measures mandated to meet the particular health hazards of coal mining. 30 U.S.C. § 801-878. These provisions addressed such highly particularized matters as the precise PELS to be met (*id.* § 842(b); see also § 843(b)), the specifications of ventilation equipment to be installed (*id.* § 863), and the type of dust measuring device to be used ("the gravametric dust sampler with four channel horizontal elutriator developed by the Mining Research Establishment of the National Coal Board, London, England," *id.* § 842(e) (as originally enacted, P.L. 91-173, Title II, § 202 (1969)).

In OSHA, by marked contrast, Congress was legislating with respect to:

> every employer whose business affects interstate commerce. Eschewing any attempt to establish substantive provisions to control all these various employers, the Act creates a general framework to govern the development of regulations, and delegates the task of formulating particular health and safety standards to the Secretary. . . . [*Industrial Union Department* v. *Hodgson*, 499 F.2d 467, 499 (D.C. Cir. 1974).]

The lesson, if any, to be drawn from the Coal Mine Health and Safety Act is that in the one statute where Congress directly addressed the question, it concluded that if worker transfers are to be relied upon as a means of providing health protection, an income-protection provision is necessary. See *Whirlpool Corp.* v. *Marshall*, *supra*, 445 U.S. at 13, n. 18.

Given this statutory framework, ATMI's argument proves too much and therefore proves nothing. For §§ 6 (b) (7) & 3(8) do not expressly provide that the Secretary can require employers to bear the cost of respirators, medical surveillance or any other control methods. Yet, ATMI does not challenge the Secretary's authority to impose those obligations through this standard. For it is manifest that Congress expected the costs of controlling occupational hazards to be placed upon employers. Congress viewed these as "reasonable and necessary costs of doing business." Leg. Hist. 1150-51 (Sen. Eagleton) See generally *supra*, pp. 35-39. And, so far as we are able to discern, or ATMI informs us, there is no distinction between the costs associated with the particular control measure here involved—*viz.*, worker transfers—and the costs of respirators or any other control measure.[79]

Finally, contrary to ATMI's assertion (Br. 55), the Congressional decision not to include a "strike with pay" provision in the Act is of no relevance to the issue at hand. This Court explained in *Whirlpool*, *supra*, that:

> . . . What primarily troubled Congress about the Daniels' bill's 'strike with pay' provision was its requirement that employees be paid their regular salary after . . . refus[ing]to work. . . . [445 U.S. at 17].

---

[79] ATMI also complains that under the standard workers who are exposed on the job to excessive levels of cotton dust and who cannot wear respirators must be offered transfers to other jobs in lower exposure areas "without any demonstration that they are suffering a work-related health impairment or even that their inability to wear respirators is related to exposure to cotton dust . . ." (ATMI Br. 52). But the purpose of this control measure, like any other, is preventive: "The Act does not wait for an employee to die or become injured. It authorizes the promulgation of health and safety standards . . . in the hope that these will act to prevent deaths or injuries from ever occurring." *Whirlpool Corp.* v. *Marshall, supra*, 445 U.S. at 12.

Senator Williams explained that the bill would have enabled workers "to walk off the job with full pay." Leg. Hist. 416. See also *id.* at 1011 (Rep. Randall), 1046 (Rep. Feighan), and 1089 (Rep. Horton).

Here, however, there is no "strike". Rather, the transfer provision will come into play only if a doctor has certified that a worker exposed to cotton dust levels above the PEL is physically incapable of wearing a respirator. At that juncture, a transfer to an available job with lower exposure levels must be offered *not* because the worker has "refused to work" but because the Secretary has determined that, in these circumstances, transfer constitutes the only remaining means of protecting the worker's health. Once the transfer is effected, the worker is paid for working, not for remaining away from work.

CONCLUSION

For the foregoing reasons, the judgment of the court of appeals should be affirmed.

Respectfully submitted,

J. ALBERT WOLL
General Counsel, AFL-CIO
815 15th Street, N.W.
Washington, D.C. 20005

ELLIOT BREDHOFF
General Counsel
Industrial Union Department, AFL-CIO
1000 Connecticut Avenue, N.W.
Washington, D.C. 20036

ARTHUR M. GOLDBERG
General Counsel
Amalgamated Clothing & Textile Workers Union
15 Union Square
New York, New York 10003

Of Counsel

GEORGE H. COHEN*
ROBERT M. WEINBERG
JEREMIAH A. COLLINS
BREDHOFF, GOTTESMAN, COHEN, CHANIN, WEINBERG & PETRAMALO
1000 Connecticut Avenue, N.W.
Washington, D.C. 20036
(202) 833-9340
* Counsel of Record

LAURENCE GOLD
815 16th Street, N.W.
Washington, D.C. 20006

Attorneys for American Federation of Labor and Congress of Industrial Organizations, Industrial Union Department, AFL-CIO, and Amalgamated Clothing & Textile Workers Union, AFL-CIO

APPENDIX A

APPENDIX A

In addition to the sections of the Occupational Safety and Health Act of 1970, P.L. 91-596, 84 Stat. 1590, 29 U.S.C. § 651 *et seq.*, which are set forth in the Appendix to Petitioner ATMI's brief, the following sections of the Act are also pertinent:

Section 6(b)(6)(A), 29 U.S.C. § 655(b)(6)(A), provides in pertinent part:

> Any employer may apply to the Secretary for a temporary order granting a variance from a standard or any provisions thereof promulgated under this section.

Section 6(b)(7), 29 U.S.C. § 655(b)(7), provides in pertinent part:

> Any standard promulgated under this subsection shall prescribe the use of labels or other appropriate forms of warning as are necessary to insure that employees are apprised of all hazards to which they are exposed, relevant symptoms and appropriate emergency treatment, and proper conditions and precautions of safe use or exposure. Where appropriate, such standard shall also prescribe suitable protective equipment and control or technological procedures to be used in connection with such hazards and shall provide for monitoring or measuring employee exposure at such locations and intervals, and in such manner as may be necessary for the protection of employees.

Section 6(b)(8), 29 U.S.C. § 655(b)(8) provides:

> Whenever a rule promulgated by the Secretary differs substantially from an existing national consensus standard, the Secretary shall, at the same time, publish in the Federal Register a statement of the reasons why the rule

as adopted will better effectuate the purposes of this Act than the national consensus standard.

Section 7(b) of the Small Business Act, 15 U.S.C. § 636(b)(5), as amended by § 28 of the Occupational Safety and Health Act, provides in pertinent part:

> The [Small Business] Administration also is empowered—
>
> * * * *
>
> to make such loans (either directly or in cooperation with banks or other lending institutions through agreements to participate on an immediate or deferred basis) as the Administration may determine to be necessary or appropriate to assist any small business concern in effecting additions to or alterations in the equipment, facilities, or methods of operation of such business in order to comply with the applicable standards promulgated pursuant to section 6 of the Occupational Safety and Health Act of 1970 or standards adopted by a State pursuant to a plan approved under section 18 of the Occupational Safety and Health Act of 1970, if the Administration determines that such concern is likely to suffer substantial economic injury without assistance under this paragraph.

APPENDIX B

APPENDIX B

A Survey of Statutory Approaches to the Consideration of Costs and Benefits in the Promulgation of Health and Safety Regulations

Balancing of costs and benefits is expressly required by several regulatory statutes. An early example is the Flood Control Act of 1936, 33 U.S.C. § 701a: "[T]he Federal Government should improve or participate in the improvement of navigable waters . . . for flood-control purposes if the benefits to whomsoever they accrue are in excess of the estimated costs and if the lives and social security of people are otherwise adversely affected." More recent examples include the Outer Continental Shelf Lands Act Amendments of 1978, 43 U.S.C. § 1347(b), which provide that offshore drilling operations shall use "the best available and safest technologies which the Secretary determines to be economically feasible, . . . except where the Secretary determines that the incremental benefits are clearly insufficient to justify the incremental costs of utilizing such technologies." (Plainly, in drafting that statute Congress did not regard the term "economically feasible" as including the concept of cost-benefit balancing; rather, additional language was inserted to incorporate that concept.) The Energy Policy and Conservation Act of 1975, as amended, 42 U.S.C. § 6295(c), (d), provides that in promulgating energy efficiency standards "the Secretary . . . shall determine that the benefits of the standard exceed its burdens based, to the greatest extent practicable, on a weighing of [several specified] factors. . . ."

In several instances, Congress has required some form of cost-benefit balancing with respect to the promulgation of certain regulations under a statute, while requiring other regulations under the same statute to be developed without regard to any such balancing, albeit with some consideration of costs. A good example is the Federal Water Pollution Control Act Amendments of 1972, as amended, 33 U.S.C. § 1251 *et seq.*

That statute specifies that in setting effluent limitations to be achieved by 1977, the Environmental Protection Agency ("EPA") is to require the use of the "best practicable control technology currently available (§ 1311 (b) (1)), and the statute further provides that EPA's "assessment of [that] technology shall include consideration of the total cost of application of technology in relation to the effluent reduction benefits to be achieved from that application. . . ." (§ 1314(b) (1) (B)). The latter requirement entails a "limited cost-benefit analysis"—a "balancing test between total cost and effluent reduction benefits [which] is intended to limit the application of technology only where the additional degree of effluent reduction is wholly out of proportion to the costs of achieving such marginal level of reduction. . . ." 118 Cong. Rec. 33696 (1972), discussed in *EPA* v. *National Crushed Stone Assn.*, No. 79-770, Sl. Op. 6, n. 10; *id.* at 10-12.

On the other hand, the 1972 Amendments provide that effluent limitations to be attained by 1973 * should be based on "the best available technology economically achievable" (as amended, § 1311(b) (2) (A)), and under that provision, while costs are to be considered, "no balancing test will be required." 118 Cong. Rec. 33696 (1972). See *EPA* v. *National Crushed Stone Assn.*, *supra*, Sl. Op. 6, n. 10; *Weyerhaeuser Corp.* v. *Costle*, 590 F.2d 1011, 1044-46 (D.C. Cir. 1978).

The amendments also authorize EPA to set more stringent effluent limitations for particular sources of pollution where the generally mandated levels will not achieve the required standard of water quality in a particular setting; but before so doing the Administrator must conduct a public hearing to assess the "economic and social" costs and benefits involved (33 U.S.C. § 1312(b) (1)), and the more stringent limitations cannot be applied against

---

* This deadline has been extended to 1987 by the Clean Water Act Amendments of 1977. See *id.*, Sl. Op. 5, n. 9.

any person who demonstrates at that hearing that "there is no reasonable relationship between the economic and social costs and the benefits to be obtained. . . ." 33 U.S.C. § 1312(b)(2).

Similarly, the Clean Water Act Amendments of 1977, 33 U.S.C. § 1251 *et seq.*, which established new criteria for the regulation of "conventional pollutants," require that in setting effluent limitations for such substances EPA shall consider "the reasonableness of the relationship between the costs of attaining a reduction in effluents and the effluent reduction benefits derived. . . ." 33 U.S.C. § 1314(b)(4)(B).

Another statute which requires cost-benefit evaluations for some regulations but not for others is the Clean Air Act Amendments of 1970, as amended, 42 U.S.C. § 7401 *et seq.*, which were passed the same week as OSHA. In that statute, the provision which authorizes EPA to prohibit the manufacture or sale of a fuel or fuel additive that significantly impairs an emission control device expressly requires EPA to perform "a cost benefit analysis" (42 U.S.C. § 7545(c)(2)(B)), while the provision which authorizes the prohibition of a fuel or additive that would "endanger the public health or welfare" does not contain such a requirement (42 U.S.C. § 7545(c)(2)(A)).

A particular form of cost-benefit balancing has also been adopted by Congress in the several statutes which are based on the concept of "unreasonable risk," each of which involves the regulation of particular types of products.

One of the first "unreasonable risk" provisions is contained in the National Traffic and Motor Vehicle Safety Act of 1966, as amended, 15 U.S.C. § 1391(1). "As the Senate hearings make clear, the word 'unreasonable' was placed in the bill deliberately, to signify a 'common-sense' balancing of safety benefits and economic cost." *United States* v. *General Motors Corp.*, 518 F.2d 420,

435 (D.C. Cir. 1975). See S. Rep. No. 89-1301, 89th Cong., 2d Sess. 6 (1966).

The year before OSHA was enacted, Congress incorporated an "unreasonable risk" requirement in the Child Protection and Toy Safety Act of 1969, as amended, 15 U.S.C. § 1261(s). The provision was included so as to require consideration of "such factors as the utility of the object, the degree of danger it presents, and the feasibility of designing out that danger." S. Rep. No. 91-237, 91st Cong., 1st Sess. 7 (1969). See generally *Forester* v. *CPSC*, 559 F.2d 774, 789 (D.C. Cir. 1977).

Two years after OSHA was enacted, Congress adopted an "unreasonable risk" requirement in two more statutes. In incorporating that concept in the Consumer Product Safety Act of 1972,* Congress stated:

> Protection against unreasonable risks is central to many Federal and State safety statutes and the courts have had broad experience in interpreting the term's meaning and application. It is generally expected that the determination of unreasonable hazard will involve the Commission in balancing the probability that risk will result in harm and the gravity of such harm against the effect on the product's utility, cost and availability to the consumer.

H.R. Rep. No. 92-1153, 92d Cong., 2d Sess. 33 (1972). See also S. Rep. No. 92-749, 92d Cong., 2d Sess. 6, 14-15 (1972). Similarly, in the Federal Environmental Pesticide Control Act of 1972, as amended, 7 U.S.C. § 136(bb), Congress defined the term "unreasonable adverse effects on the environment" to mean "an unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide." The EPA may regulate a pesticide only to the extent that the pesticide entails such "unreasonable adverse effects." See 7 U.S.C. §§ 136

---

* See 15 U.S.C. §§ 2056(a), 2058(c)(1)(A),(C), 2058(c)(2)(A).

a(c)(5)(C), (D), 136a(c)(7), (8), 136a(d), 136d(b). This explicitly requires a balancing of costs and benefits. See *Environmental Defense Fund* v. *EPA*, 548 F.2d 998, 1005 (D.C. Cir. 1976).

Recently, Congress enacted yet another statute based on the concept of "unreasonable risk" and explicitly requiring a balancing of costs and benefits: the Toxic Substances Control Act of 1976, 15 U.S.C. § 2605(a), (c)(1).

Finally, the provisions of the Federal Food, Drug, and Cosmetic Act concerning human and animal drugs, 21 U.S.C. §§ 321(p)(1), 360b, illustrate an altogether different approach to the consideration of costs and benefits. In determining whether a human drug is "safe" the Food and Drug Administration ("FDA") must assess whether "the expected therapeutic gain [from the drug] justifies the risk entailed by its use." *United States* v. *Rutherford*, 442 U.S. 544, 555 (1979). That is to say, a drug is "safe" only if its curative benefits outweigh its side effects. But while the statute requires a balancing of *therapeutic* costs and benefits, it does not contemplate a balancing of *economic* costs and benefits. See Decision of the Commissioner in the Matter of Diethylstilbestrol: Withdrawal of Approval of New Animal Drug Applications, 44 Fed. Reg. 54852, 54881-54883 (Sept. 21, 1979). On the other hand, the provisions of the Food, Drug, and Cosmetic Act which authorize FDA to set "tolerances" for certain hazardous substances (e.g., 21 U.S.C. §§ 346, 346a, 348(c)(4)(A), (B)) may contemplate some form of economic cost-benefit balancing. *Id.* at 54881-54882.